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The business magazine of the farm & industrial equipment industry

November 1984

FOUR DOLLARS

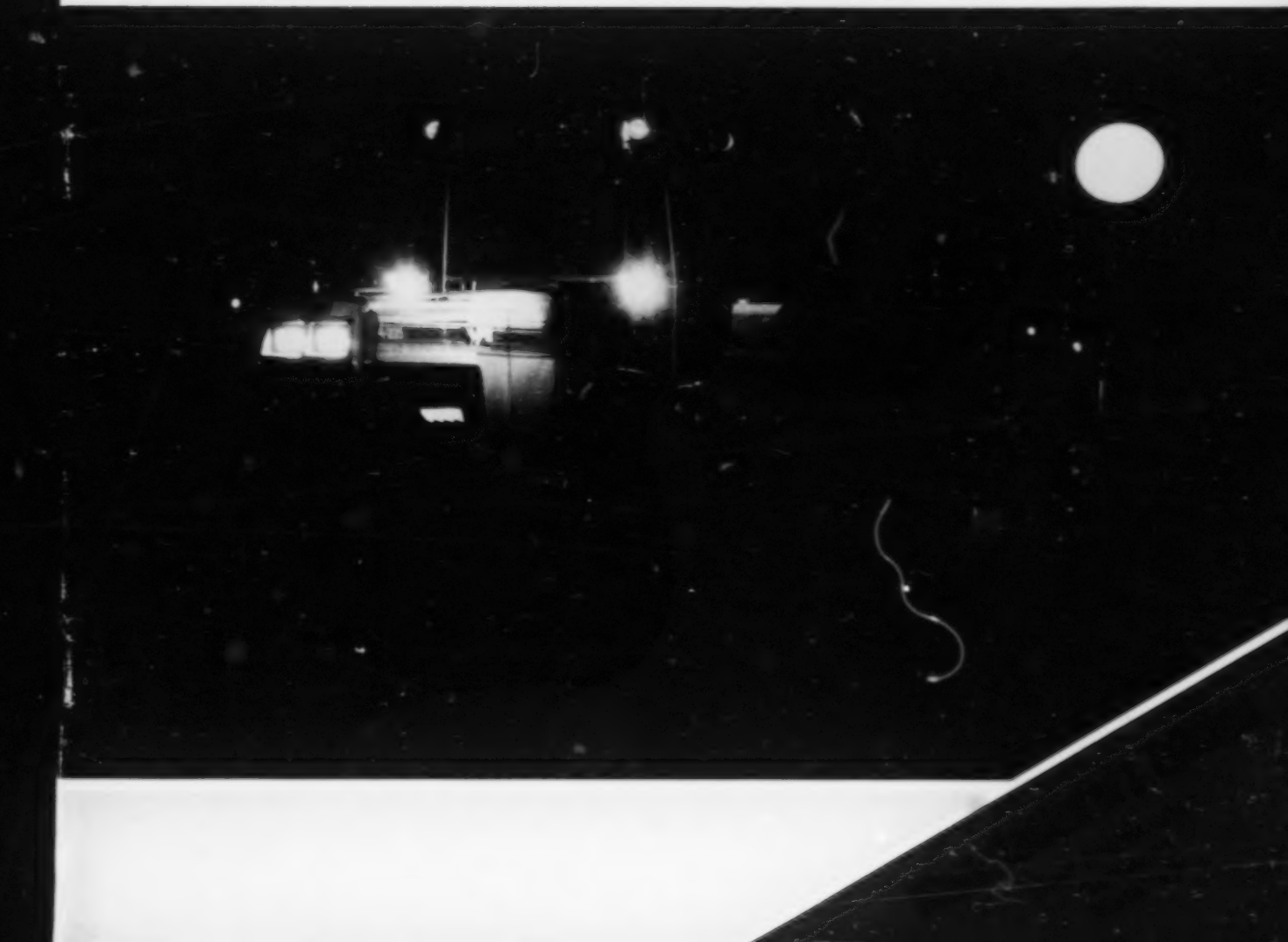
Implement & Tractor

47th Market Statistics Issue

Retail Sales Perspective

Latest Import-Export Data

Equipment on Farms



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Implement & Tractor

The business magazine of the farm and industrial equipment industry

November 1984 • Vol. 99 • No. 13

47th Annual Statistics Issue

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On the cover...photo courtesy of White Farm Equipment Co.

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I&T Update

September U.S. Retail Sales: Some Ups, But Mostly Downers

September retail sales of farm tractors in the U.S. were off by 5 per cent, but there were vast variances between horsepower groups. Baler and mower-conditioner volume moved up sharply, countering declines in combine and forage harvester sales. Source: Farm & Industrial Equipment Institute flash report.

Unit Retail Sales

	September			January-September		
	1984	1983	Pct. Change	1984	1983	Pct. Change
Farm Wheel Tractors:						
2-wheel drive						
Under 40 hp	3,509	3,381	+ 3.8	40,173	37,086	+ 8.3
40-99 hp	2,372	2,902	−18.3	29,404	29,196	+ .7
100-139 hp	681	864	−21.2	7,087	10,682	−33.7
Over 140 hp	1,463	1,072	+36.5	10,419	8,936	+16.6
Total 2-wheel drive	**8,025**	**8,219**	**− 2.4**	**87,083**	**85,900**	**+ 1.4**
4-wheel drive						
Under 200 hp	74	167	−55.7	1,165	1,363	−14.5
Over 200 hp	176	339	−48.1	1,926	2,026	− 4.9
Total 4-wheel drive	**250**	**506**	**−50.6**	**3,091**	**3,389**	**− 8.8**
Total All Tractors	**8,275**	**8,725**	**− 5.2**	**90,174**	**89,289**	**+ 1.0**
S-P Combines	1,391	1,486	− 6.4	6,566	8,177	−19.7
Balers (under 200-lb. bales)	674	537	+25.5	7,378	8,312	−11.2
Forage Harvesters (shear-bar type)	571	696	−18.0	2,380	3,094	−23.1
Mower-Conditioners	1,049	714	+46.9	11,514	12,954	−11.1

1983 Shipments Data Just In!

Arrived too late for inclusion in I&T's 47th Market Statistics Issue: Data on shipments by U.S. manufacturers of wheel tractors, farm equipment and lawn and garden equipment. More details will appear in a later issue. Here are some highlights:

- Shipments of farm- and non-farm wheel tractors, their attachments and parts declined to $2.020 billion in 1983 from $2.567 billion in 1982.
- Shipments of farm equipment other than tractors declined to $4.472 billion in 1983 from $5.535 billion in 1982.
- Shipments of lawn and garden equipment increased from $2.486 billion in 1982 to $2.665 billion in 1983.

Here are shipment values on major groups of farm equipment including parts for 1983 with comparable 1982 data in parentheses:

Planting, seeding and fertilizing machinery—$449 million ($673 million).

Harrows, rollers, pulverizers, stalk cutters—$342 million ($361 million).

Plows—$128 million ($151 million).

Harvesting machinery—$1.478 billion ($2.07 billion).

Haying machinery—$525 million ($545 million).

Dairy equipment—$118 million ($111 million).

Sprayers, dusters—$229 million ($258 million).

Elevators, blowers—$73 million ($112 million).

Cultivators, weeders—$136 million ($202 million).

Crop preparation equipment—$186 million ($282 million).

Poultry equipment—$104 million ($110 million). Hog equipment—$50 million ($42 million).

Other barn/barnyard equipment—$183 million ($202 million). Wagons, other farm transport equipment—$153 million ($173 million).

Irrigation systems—$317 million ($241 million).

Canadian September: Sales Mostly Weak

The Canadian Farm & Industrial Equipment Institute flash report for September tells a story like the one of the U.S. Tractor sales for the month of September were off 16 per cent at 1,283. But for the year, tractor volume is a 7 per cent plus at 13,380 units. The strength has been in under-40-hp units (up 25 per cent at 2,779), 40-99 hp units (up 18 per cent at 5,797) and four-wheelers (up 13 per cent at 1,775).

Self-propelled combines, down 40 per cent for September at 376 units, are off 15 per cent for the year at 1,643. Big balers are off 20 per cent for the year at 1,675; small balers are off 4 per cent at 1,644. Mower-conditioners are down 11 per cent for the year at 1,992 units.

Markets Down In France, Too

In France, wheel tractor sales for the first half of 1984 were down 6 per cent at 18,302 units, according to SYGMA, the association of French equipment makers. Domestic sales came to 9,694 units, off 4 per cent. Export sales of 8,608 were off 8 per cent.

Combine sales were off 25 per cent at 841 units. Sales of rectangular balers were up 4 per cent at 8,907; big baler sales volume was also up—to 7,298 units, a 9 per cent rise.

ROPS Now Standard On All Deere Tractors

As part of a two-phase effort to enhance farm tractor operator safety, Deere & Co. is now shipping all farm tractors from the 14-hp 650 to the 120-hp 4250 with ROPS protection. On larger tractors, ROPS protection has been standard for over 10 years.

Moglia Succeeds Merv Manning at Ford Tractor

Robert F. Moglia, who had been Ford Tractor Operations' assistant general manager for product development, manufacturing and supply, is new general manager of FTO. He succeeds Mervyn H. Manning, who has been named president of Ford Asia-Pacific, Inc., and will be based in Melbourne, Australia.

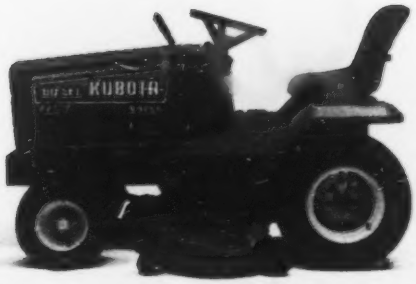
Moglia joined Ford in 1960 as a senior product design engineer at FTO. He became FTO's product planning manager in 1973 and assistant general manager of product development in 1977.

Manning, who had headed FTO since 1977, recently completed a term as chairman of the Farm & Industrial Equipment Institute.

Hesston's First Nine Months: $145 Million

Hesston Corp. has reported sales in the first nine months of 1984 of $145.5 million compared with $155.5 million in the same 1983 period. The company lost $1.77 million in the first nine months of 1984 compared with 1983 earnings of $4.69 million.

The third quarter this year produced a loss of $4.5 million on sales of $40 million; last year, the third quarter posted sales of $54 million and a profit of $2.67 million.



G4200H, 12 hp diesel engine.

AND EVERYTHING IN-BETWEEN.

Kubota is growing stronger.

We're building bigger tractors up to 85 PTO hp with factory-installed cabs. We're building smaller models too, including the country's first 10 hp water-cooled diesel lawn and garden tractor.

Our healthy growth is simple to explain. It starts with a nearly 100-year history of innovation. For example, we built the first small tractor powered by a 3-cylinder diesel engine and 4-wheel drive. Today, every Kubota has a strong diesel engine.

And we don't just put our name on a tractor, we build the tractor from the ground up.

I&T SINCE 1886

AUCTION PRICES OF USED EQUIPMENT

An exclusive I&T monthly report of actual prices paid recently at these leading national wholesale auctions.

Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.

YODER & FREY, INC.
Archbold, Ohio
September 11, 1984

INTERNATIONAL HARVESTER TRACTORS

A, ... 525
Cub, 1950 (Fair) 875
C, 1951 (Fair) 800
C, 1952 (Rough) 800*
H, 1952 (Rough) 500*
H, 1949 (Rough) 550*
H, 1944 (Rough) 375
H, 1945 (Rough) 285*
H, 1944 (Rough) 250
M, 1950 (Fair) 700*
M, 1949 (Fair) 550*
M, 1949 (Rough) 350
M, 1950 (Rough) 600*
M, 1948 (Fair) 850
Sup. M, 1952 (Rough) 650*
Sup. M, 1953 (Rough) 200
140, 1961 (Rough) 1850
300, 1957 (Rough) 900*
300, 1956 (Fair) 525
400, 1957 (Rough) 775*
460, (Fair) 700*
460, 1958 (Good) 1425
560, 1960 (Good) 2100
560, 1959 (Rough) 1700
574, 1974 (Fair) 4200
666, 1974 (Fair) 3300*
706, 1965 (Fair) 2900*
756, 1971 (Good) 7000*
766, 1974 (Fair) 7100
806, 1964 (Rough) 1900*
806, 1967 (Fair) 4750
806, 1972 (Fair) 4750*
826 diesel, 1970 (Rough) 5750*
856 diesel, 1968 (Good) 5200*
856, 1970 (Good) 7200*
966, 1975 (Fair) 6500
966 diesel, 1972 (Good) 8100*
966 diesel, 1972 (Good) 7250
966 diesel, 1975 (Good) 8100
966, 1974 (Fair) 7100
986, 1978 (Good) 11,400*
986, 1977 (Good) 12,250
1026 hydro, 1970 (Fair) 5400
1066, 1972 (Fair) 6500*
1066 diesel, 1974 (Good) 6900
1066 diesel, 1974 (Good) 7000*
1066 diesel, 1975 (Fair) 6000*
1066, 1972 (Fair) 7700
1066, 1976 (Fair) 2250*
1066, 1975 (Fair) 8750
1206, 1965 (Fair) 4500*
1466, 1974 (Good) 6650*
4586, 1978 (Good) 13,500*

WHITE TRACTOR

2-135 diesel, 1978 (Fair) 13,000*

JOHN DEERE TRACTORS

A, 1950 (Fair) 625
B, 1946 (Fair) 475*
B, 1945 (Fair) 500*
50, 1955 (Fair) 750
60, 1955 (Fair) 825
420, 1956 (Fair) 1600*
MT, 1950 (Fair) 675
MT, 1949 (Fair) 490
G, 1949 (Fair) 450*
40, 1950 (Rough) 650
50, 1955 (Fair) 980
720 diesel, 1957 (Fair) 800*
720, 1957 (Fair) 2000*
730 diesel, 1960 (Fair) 2450*
730 diesel, 1958 (Rough) 1050*
730, 1958 (Fair) 1775*
1020, 1970 (Good) 3700*
2010, 1962 (Rough) 2300*
2010, 1962 (Fair) 1750*
3010 diesel, 1963 (Fair) 3600*
3010, 1966 (Good) 3500
3010, 1962 (Fair) 2275
3010 diesel, 1963 (Rough) 2250
3020, 1969 (Fair) 5500
4010 diesel, 1963 (Fair) 4250
4010 diesel, 1967 (Fair) 4100*
4010, 1967 (Fair) 2600*
4020, 1966 (Rough) 4900*
4020 diesel, 1967 (Fair) 5400*
4020 diesel, 1968 (Fair) 5700*
4020 diesel, 1965 (Rough) 3000
4020, 1965 (Fair) 4800*
4020, 1965 (Good) 6200*
4020, 1965 (Fair) 4900*
4030, 1975 (Fair) 8300*
4230, 1975 (Fair) 8750*
4320, 1972 (Fair) 7500*
4430, 1974 (Fair) 10,750*
4630, 1975 (Good) 14,500*
5020, 1968 (Fair) 4250*

COCKSHUTT TRACTOR

20, 1945 (Fair) 675

OLIVER TRACTORS

1365, ... 2275
1550, 1967 (Good) 4650
1800 diesel, 1963 (Fair) 2300*
1800, 1962 (Rough) 1500*
1850 diesel, 1965 (Fair) 2900*
1850 diesel, 1966 (Fair) 3750
1850, 1966 (Rough) 1500*
1950, 1967 (Fair) 4800*
2150 diesel, 1968 (Fair) 4000*

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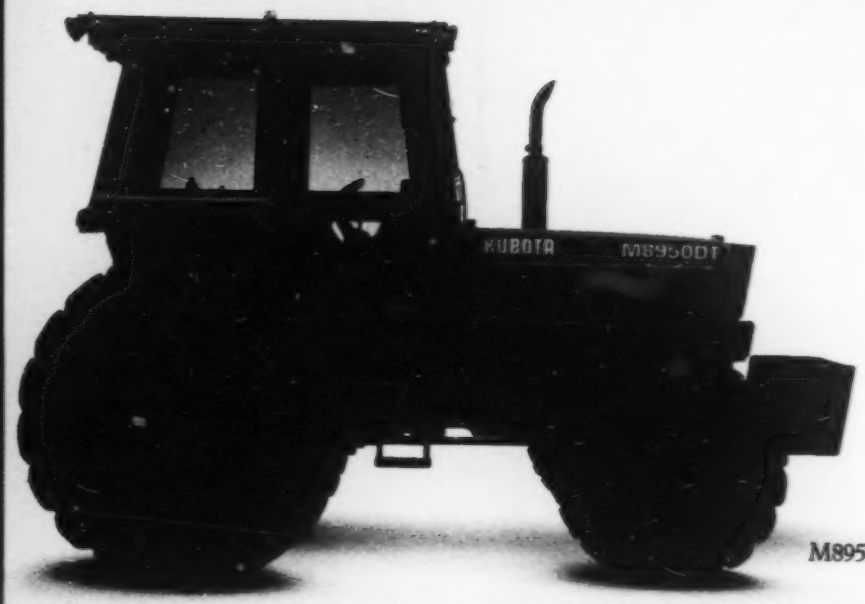

M8950, 85 PTO hp diesel engine.

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Would you like to represent the country's fastest-growing tractor company? For more information, write Dealer Development Manager, Kubota Tractor Corporation, P.O. Box 7020, Compton, CA 90224.

KUBOTA
Nothing like it on earth.

Write in (8) on Reply Card

FORD TRACTORS

8N, (Fair)	1075
8N, 1947 (Fair)	1300*
8N, 1948 (Fair)	1200*
9N, 1942 (Rough)	875
9N, 1943 (Rough)	700*
800, 1955 (Rough)	2450
960, 1957 (Fair)	1200
801, 1955 (Rough)	1200*
901, 1957 (Fair)	1225*
4000, 1963 (Fair)	1200*
4000, 1967 (Fair)	2500*
5000, 1974 (Fair)	4500*
8000, 1972 (Fair)	3700*
8000, 1972 (Fair)	4500*
9000, 1971 (Fair)	5100
7700, 1978 (Good)	8750*
3000 diesel, 1965 (Rough)	1700*
3000, 1971 (Fair)	4500*
971, 1956 (Rough)	1000*
971 diesel, 1955 (Rough)	750*
4200, 1969 (Rough)	2000*
Jub., 1953 (Rough)	1800*
9700, 1977 (Good)	12,000*

FERGUSON & MASSEY FERGUSON

TO-20, 1947 (Fair)	900
TO-30, 1949 (Fair)	1225
TO-30, 1950 (Rough)	1260
TO-30, 1951 (Rough)	1300*
35, 1959 (Rough)	2000*
65, 1960 (Fair)	1850
85 diesel, 1959 (Rough)	1000
90, 1962 (Fair)	1400*
165, 1970 (Rough)	2800*
180, 1965 (Fair)	1900
180, 1965 (Fair)	3000
1100, 1967 (Rough)	2200
1100, 1968 (Fair)	3000*
1100, 1969 (Rough)	2800*
1135 diesel, 1974 (Fair)	6000*
1155 diesel, 1976 (Fair)	5300*

ALLIS-CHALMERS TRACTORS

WD, 1950 (Fair)	700
WD, 1945 (Rough)	550
D-15, 1966 (Fair)	1500*
190XT, 1969 (Fair)	2000
190XT diesel, 1969 (Fair)	1400*
190XT, 1965 (Fair)	3050
5040,	3800

CASE TRACTORS

1212 DB, 1973 (Fair)	3250*
990 ldr., 1964 (Rough)	1100*
530 ldr., 1966 (Rough)	2400*
770, (Fair)	2950
830 diesel,	525
830 diesel, 1967 (Fair)	1600*
930, 1965 (Good)	1900*
930, 1965 (Fair)	3000*
1030 diesel, 1967 (Good)	3600*
1030 diesel, 1964 (Good)	3250*
1030 diesel, 1967 (Good)	3600*
1070, 1972 (Fair)	3000*
1070 diesel, 1972 (Fair)	6000*
1070, 1971 (Rough)	3550
1070, 1970 (Fair)	4750

MASSEY-HARRIS TRACTOR

44, 1950 (Fair)	520

MINNEAPOLIS-MOLINE TRACTOR

G-955 diesel, 1968 (Fair)	4250*

DEUTZ TRACTORS

D10006, (Good)	2700*
D10006, (Rough)	2600*
D13006, (Fair)	5750
50-60, (Rough)	4000*

ENLOW AUCTION CO.
Tulsa, Okla.
September 22, 1984

ALLIS-CHALMERS TRACTORS

D-15, plow, 1962 (Fair)	1250*
D-17 diesel, ldr., 1963 (Good)	2450*

CASE TRACTORS

430, 1961 (Good)	2250*
530, ldr., 1969 (Fair)	2050
930 diesel, 1966 (Good)	3475
850-C diesel dozer, 1981 (Good)	15,500*

DAVID BROWN TRACTOR

885 diesel, 1973 (Good)	3250

FERGUSON TRACTORS

20, 1950 (Good)	1200
30, 1952 (Rough)	750
40, 1956 (Fair)	1250

FORD TRACTORS

9N, 1943 (Good)	900
9N, 1944 (Good)	1250
9N, 1945 (Good)	1275
9N, 1945 (Good)	950
9N, 1946 (Fair)	775
9N, 1946 (Fair)	850
9N, 1947 (Fair)	875
8N, 1948 (Good)	1250
8N, 1948 (Fair)	975*
8N, trencher, 1949 (Good)	1275
8N, 1950 (Good)	1350
8N, 1950 (Good)	1400
8N, 1951 (Good)	1500*
8N, 1952 (Good)	1600*
8N, 1952 (Fair)	1100
NAA, 1953 (Good)	1950*
NAA, 1953 (Rough)	1110
650, 1956 (Good)	1950
650, 1956 (Good)	2450
650, ldr., 1957 (Good)	2500*
800, 1955 (Good)	2100
850, 1955 (Good)	2500
841 LP, 1958 (Fair)	1050*
900 Select-O-Speed, 1954 (Good)	1850
900, mo., 1955 (Fair)	1200*
Dexta diesel, 1961 (Fair)	1350
2000 diesel, 1965 (Fair)	2000
2000 diesel, mo., 1969 (Good)	2950
2000 diesel, 1970 (Good)	3050
2000, 1972 (Good)	3500*
2000, 1973 (Good)	3850
3000 diesel, 1969 (Good)	2900*
3000 diesel, 1975 (Good)	3850*
4000, backhoe, 1964 (Fair)	3000
4000 diesel, 1970 (Good)	3250
4000 diesel, 1970 (Good)	3400*
4000 diesel, 1972 (Good)	3600*
4000 diesel, 1974 (Good)	3850
4110, Select-O-Speed, 1969 (Good)	2500*
4110, 1969 (Fair)	1700*
3400 diesel, ldr., 1970 (Excellent)	6250
5000 diesel, 1969 (Good)	4000*
5000 diesel, 1970 (Good)	4400
5000 diesel, 1972 (Good)	5200
8000 diesel, 1970 (Fair)	4950*

INTERNATIONAL HARVESTER TRACTORS

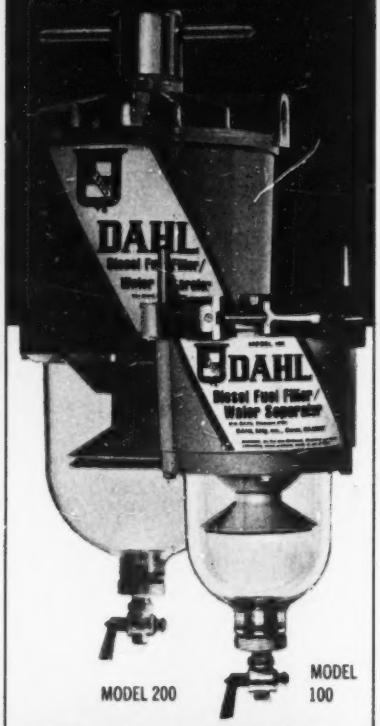
Cub, mo., 1958 (Good)	1575*
284, 1977 (Good)	2750
384 diesel, 1979 (Fair)	3200*
414, 1964 (Fair)	1200*

(Continued on page 58)

THE DIESEL PROTECTORS

Dahl removes virtually 100% of the water and solid contaminants from diesel fuel. Factory filters cannot keep the fuel clean. Dirty diesel fuel lessens performance and service life of diesel engines.

INSURE YOUR DIESEL INJECTION SYSTEM WITH A DAHL FUEL FILTER/ WATER SEPARATOR



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Here's our

I&T 47 TH MARKET STATISTICS ISSUE

■BACK IN the dawn of the computer age, the editors of I&T thought that this new technology was going to make the gathering and presenting of statistical data a piece of cake. October, we reasoned, was going to be our gone-fishin' month because all that information would be handled by a push of a button. Data would be on hand, ready for the printer's crafts, well in advance, and so forth.

But it hasn't worked out that way. Farm census data can take about as long to arrive as 20 years ago. Manufacturers' shipments numbers take longer than they did in the past. It may be because the computer people try to do more with what they have, and so it takes longer, but whatever the reason, many of the numbers I&T hoped to have for its 47th statistical issue didn't make it in time.

You'll see, in our Equipment on Farms section, 1978 census data beside our July 1 estimates; we had hoped for information from the 1982 census. It will probably get here any day, but not in time for our deadline. And information on Manufacturers' Shipments will have to appear in a later issue of I&T, for the Dept. of Commerce hadn't sent it out as of late October.

But there's good news! Besides I&T's estimates of equipment on farms by state as of July 1, 1984, our export and import numbers are up to date, through June 30, 1984, with several years' perspective concerning specific products, values and their countries of destination or origin. There is also perspective on tractor retail sales over several years.

Points to note. Take a look at Tractors on Farms, page 26. The bottom line over a 25-year span reflects very little change in total number, and much of that has been caused by definition changes about what constitutes a farm, combined with refined information gathering by the Bureau of the Census.

It suggests to us that since there are far fewer workers on U.S. farms, the tractors that are there have to get far fewer hours of use each year.

The moldboard plow total for 1984 isn't much different from that of 1958, but look at some of the differences in individual states. Knowing what we know about changed tillage practices and changed equipment, the numbers suggest to us that there are vast quantities of unused moldboards in field corners and behind barns across the nation.

Farm equipment imports had been going down for several years, but they increased in 1983 and again in the first half of 1984. Similarly, exports had been going down, but they started up again in the first half of this year. The U.S. still has a favorable trade balance in tractors and farm equipment.

Most I&T subscribers, our researchers tell us, hang on to their I&T Market Statistics issues about as long as they keep their Red Books and Product Files. If you're one of the keepers, we suggest that you watch upcoming I&T issues for more key industry data and tuck them in with this one. I&T

Motor Vehicles and Specified Machines on U.S. Farms and Average Prices of Wheel Tractors, January 1, Designated Years[1]

Year	Tractors (wheel & crawler) Thousands	Motor Trucks Thousands	Grain Combines Thousands	Corn Pickers & Shellers Thousands	Pick-up Balers Thousands	Forage Harvesters Thousands	Garden Tractors & Tillers[2] Thousands	Wheel Tractors Wholesale Prices[3] Per Unit Dollars	Wheel Tractors Wholesale Prices[3] Horsepower Dollars
1981	4,743	2,850	980	740	685	291	468	$ 2,578	$ 50
1962	4,763	2,885	960	730	703	300	485	$ 2,819	$ 51
1963	4,778	2,925	940	720	718	307	500	$ 3,046	$ 53
1964	4,786	2,970	920	705	734	312	513	$ 3,443	$ 53
1965	4,787	3,030	910	690	751	316	699	$ 3,541	$ 56
1966	4,783	3,017	888	686	752	316	725	$ 3,886	$ 58
1967	4,786	3,009	867	680	748	319	750	$ 4,257	$ 62
1968	4,766	3,016	847	673	739	321	770	$ 4,709	$ 66
1969	4,712	3,004	820	657	725	314	790	$ 4,976	$ 71
1970	4,619	2,978	790	635	708	304	805	$ 5,560	$ 76
1971	4,562	2,985	760	629	698	309	815	$ 6,190	$ 80
1972	4,509	2,993	725	625	687	315	825	$ 6,486	$ 84
1973	4,477	3,006	703	618	680	324	835	$ 6,953	$ 85
1974	4,478	3,020	685	618	677	332	850	$ 7,294	$ 86
1975	4,463	3,032	666	615	666	337	870	$ 8,459	$ 91
1976	4,434	3,043	647	610	642	342	890	$11,220	$112
1977	4,381	3,052	630	605	614	346	905	$12,692	$124
1978	4,350	3,054	615	600	595	345	917	$13,431	$144
1979	4,990	3,555	664	694	769	376	1,060	$16,512	$149
1980	4,960	3,566	677	690	761	381	1,075	$18,139	$166
1981	4,925	3,577	690	685	752	386	1,085	$23,308	$199
1982	4,855	3,585	698	680	742	388	1,090	$25,941	$204
1983	4,815	3,594	703	674	732	390	1,090	$33,647	$234
1984	4,785	3,600	705	667	720	388	1,087	$35,590	$245

[1]SOURCE: Reports of the USDA and the Bureau of the Census. On-farm data after 1970, except 1975 and 1979, are estimated by I&T.
[2]Motor Tillers included after 1964.
[3]Estimated at wholesale level by dividing **Value of Manufacturers' Shipments** by **Units Shipped** and by **Maximum Belt Horsepower**, data are published in "Current Industrial Reports" of the Bureau of the Census.
Note: Data from the 1978 Census (Jan. 1, 1979 above) and later years, reflect changes in data collection, resulting in improved coverage by the Census and are not fully comparable with earlier years.

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Principal Machines on Farms – 1984

STATE	WHEEL AND CRAWLER TRACTORS						TRACTOR MOLDBOARD PLOWS	
	1959 Census Number	1964 Census Number	1969 Census Number	1974 Census Number	1978[1] Census Number	Estimated July 1, 1984 Number	Estimated July 1, 1958 Number	Estimated July 1, 1984 Number
Maine	17,793	16,290	14,252	13,493	15,064	15,360	12,400	8,900
New Hampshire	6,605	6,253	4,953	4,989	5,584	6,400	4,600	2,880
Vermont	16,669	16,333	15,227	14,706	16,322	16,100	10,200	9,660
Massachusetts	12,068	11,575	9,537	9,341	10,902	11,600	8,800	5,980
Rhode Island	1,651	1,687	1,359	1,359	1,684	1,740	1,000	830
Connecticut	11,219	9,963	8,679	7,924	9,169	9,400	7,700	5,500
New York	138,670	136,304	122,645	118,313	128,248	127,000	107,000	78,800
New Jersey	24,726	22,042	19,984	19,324	22,991	22,800	21,500	17,100
Pennsylvania	144,759	144,149	126,810	124,251	142,844	143,700	118,600	97,800
Delaware	8,259	7,992	7,555	7,631	8,720	8,650	6,700	6,480
Maryland	37,291	37,203	34,174	34,705	40,699	41,100	30,500	28,370
NORTHEAST	**419,710**	**409,791**	**365,175**	**356,036**	**402,227**	**403,850**	**329,000**	**262,300**
Ohio	204,681	199,694	194,962	188,580	205,972	197,000	161,000	159,900
Indiana	186,853	181,086	174,055	167,382	183,002	175,500	149,000	142,300
Illinois	290,002	287,480	275,203	272,093	285,773	277,200	210,000	183,000
Iowa	327,863	329,172	318,998	317,052	328,292	314,000	235,000	215,500
Missouri	191,512	198,095	201,513	189,672	205,572	195,500	135,000	148,600
CORN BELT	**1,200,911**	**1,195,527**	**1,164,731**	**1,134,779**	**1,208,611**	**1,159,200**	**890,000**	**849,300**
Michigan	169,782	169,920	152,741	143,569	157,697	148,300	139,000	129,000
Wisconsin	234,387	247,427	229,752	237,457	258,119	251,000	171,000	164,700
Minnesota	275,833	284,887	258,614	260,535	282,533	273,000	210,000	182,100
LAKE STATES	**680,002**	**702,234**	**641,107**	**641,561**	**698,349**	**672,300**	**520,000**	**475,800**
North Dakota	121,039	122,056	118,069	123,072	121,966	119,200	84,000	69,100
South Dakota	115,639	120,100	111,532	114,456	112,782	107,500	84,000	67,900
Nebraska	175,254	180,423	166,098	170,423	177,691	175,800	108,000	96,700
Kansas	173,651	174,185	163,180	161,276	160,479	156,000	123,000	96,500
GREAT PLAINS	**585,764**	**596,764**	**558,879**	**569,317**	**572,918**	**558,500**	**399,000**	**330,200**
West Virginia	21,995	23,926	23,842	23,265	27,951	27,500	15,400	17,900
Kentucky	103,415	118,404	137,105	129,069	164,862	158,500	71,000	103,000
Tennessee	97,800	108,319	122,528	110,941	130,031	124,500	43,000	65,700
Virginia	75,143	78,989	79,347	76,121	90,284	88,400	52,000	62,600
North Carolina	140,639	149,850	150,825	130,140	152,917	141,600	57,600	72,200
APPALACHIAN	**438,992**	**479,488**	**513,647**	**469,536**	**566,045**	**540,500**	**239,000**	**321,400**
South Carolina	48,637	50,931	50,115	45,321	53,627	51,370	9,200	13,350
Georgia	89,392	89,049	84,366	77,067	85,049	84,700	23,500	34,400
Florida	35,820	41,295	42,958	44,192	57,226	63,000	12,300	20,800
Alabama	67,559	71,925	75,069	68,521	75,398	72,900	20,500	25,300
SOUTHEAST	**241,408**	**253,200**	**252,508**	**235,101**	**271,300**	**271,970**	**65,500**	**93,850**
Mississippi	84,425	90,347	88,677	76,808	80,964	77,700	29,700	32,600
Louisiana	53,229	60,618	63,194	55,933	64,337	65,500	15,400	23,500
Arkansas	83,852	90,993	86,977	78,083	89,421	89,000	41,900	51,000
DELTA STATES	**221,506**	**241,958**	**238,848**	**210,824**	**234,722**	**232,200**	**87,000**	**107,100**
Oklahoma	102,323	101,605	102,397	91,661	105,795	101,000	74,000	81,800
Texas	268,233	269,519	282,088	251,687	280,102	279,000	74,500	91,900
SOUTHERN PLAINS	**370,556**	**371,124**	**384,485**	**343,348**	**385,897**	**380,000**	**148,500**	**173,700**
Montana	59,510	61,832	58,729	58,457	55,941	57,600	30,500	27,700
Idaho	56,961	58,607	54,091	55,419	55,392	59,200	40,000	36,900
Wyoming	20,737	21,596	20,925	20,801	19,756	19,500	15,400	14,400
Colorado	64,051	63,906	59,112	58,091	59,959	60,200	34,000	28,300
New Mexico	17,146	17,919	15,998	17,021	17,546	17,950	11,300	8,600
Arizona	13,443	13,747	12,136	13,812	12,749	14,750	4,200	3,500
Utah	21,803	22,256	20,128	21,110	22,206	23,400	17,500	15,400
Nevada	5,297	5,557	5,318	5,515	5,453	5,680	3,100	2,650
MOUNTAIN STATES	**258,948**	**265,420**	**246,437**	**250,226**	**249,002**	**258,280**	**156,000**	**137,450**
Washington	63,114	65,813	58,600	59,542	58,190	67,800	42,000	40,300
Oregon	56,732	58,741	51,223	52,651	52,283	59,000	44,000	37,800
California	147,390	142,812	138,914	140,393	136,256	165,400	70,000	67,800
PACIFIC	**267,236**	**267,366**	**248,737**	**252,586**	**246,729**	**292,200**	**156,000**	**145,900**
TOTAL	**4,684,852**	**4,782,872**	**4,614,554**	**4,463,314**	**4,835,800**	**4,769,000**	**2,990,000**	**2,897,000**

[1]Only wheel tractors are included in the 1978 Census.

Principal Machines on Farms – 1984

STATE	COMBINES[1] 1964 Census Number	1969 Census Number	1974 Census Number	1978 Census Number	Estimated July 1, 1984 Number	CORN HEADS FOR COMBINES[2] 1969 Census Number	1974 Census Number	1978 Census Number	Estimated July 1, 1984 Number
Maine	875	218	242	415	410	120	141	192	190
New Hampshire	27	8	5	18	15	65	55	64	55
Vermont	344	113	87	170	150	175	238	375	400
Massachusetts	70	34	35	47	40	84	103	113	115
Rhode Island	20	5	7	15	15	21	10	23	20
Connecticut	77	40	15	86	65	92	85	157	150
New York	16,536	4,902	5,114	5,994	6,070	1,706	2,344	3,576	4,070
New Jersey	1,726	634	766	1,226	1,240	269	324	671	680
Pennsylvania	23,939	6,777	7,297	9,851	9,950	1,924	2,636	4,443	5,070
Delaware	1,780	979	1,127	1,351	1,400	566	681	1,035	1,070
Maryland	5,237	2,604	2,740	3,610	3,770	1,555	1,954	2,799	3,180
NORTHEAST	**50,631**	**16,314**	**17,435**	**22,783**	**23,125**	**6,577**	**8,571**	**13,448**	**15,000**
Ohio	50,291	20,805	26,009	33,996	35,650	11,892	17,515	24,522	27,480
Indiana	46,395	23,871	29,485	37,695	40,650	17,920	24,616	32,737	37,060
Illinois	80,857	48,116	55,085	63,650	69,600	37,649	46,362	56,213	63,100
Iowa	86,178	28,221	42,117	55,889	65,900	22,302	37,864	53,427	64,000
Missouri	44,535	24,208	26,253	34,029	35,500	16,112	18,278	23,544	24,360
CORN BELT	**308,256**	**145,221**	**178,949**	**225,259**	**247,500**	**105,875**	**144,635**	**190,443**	**216,000**
Michigan	41,360	13,053	14,649	19,474	20,350	4,306	7,098	11,333	13,250
Wisconsin	45,516	10,859	13,392	18,553	19,850	3,566	5,147	8,589	10,360
Minnesota	71,748	27,189	35,033	45,225	50,550	12,102	18,780	27,390	32,160
LAKE STATES	**158,524**	**51,101**	**63,074**	**83,252**	**90,750**	**19,974**	**31,025**	**47,312**	**55,770**
North Dakota	41,782	26,952	27,273	31,112	30,250	753	864	1,619	1,810
South Dakota	28,289	11,926	13,941	16,587	17,950	3,483	5,386	7,759	9,030
Nebraska	43,205	25,730	29,224	35,147	37,800	13,370	18,578	24,687	28,260
Kansas	59,813	41,601	41,871	47,650	48,150	6,533	8,038	9,282	9,870
GREAT PLAINS	**173,089**	**107,209**	**112,309**	**130,496**	**134,150**	**24,139**	**32,866**	**43,347**	**48,970**
West Virginia	1,020	245	307	479	475	147	199	265	300
Kentucky	9,737	4,565	6,329	10,760	11,650	3,196	4,390	8,510	9,120
Tennessee	11,537	5,773	6,843	10,952	11,700	2,458	2,734	5,634	5,770
Virginia	9,281	3,769	4,309	6,150	6,150	2,243	2,972	4,487	4,850
North Carolina	14,847	7,982	8,828	13,535	14,300	5,279	6,696	10,671	11,920
APPALACHIAN	**46,422**	**22,334**	**26,616**	**41,876**	**44,275**	**13,323**	**16,991**	**29,567**	**31,960**
South Carolina	7,085	4,483	4,706	6,609	6,760	1,803	2,285	3,931	4,130
Georgia	9,177	5,406	6,255	9,924	10,920	4,036	4,836	7,637	8,080
Florida	1,230	1,010	1,182	1,792	1,970	584	773	1,207	1,230
Alabama	4,806	3,423	3,988	6,958	7,440	1,635	1,858	3,468	3,560
SOUTHEAST	**22,298**	**14,324**	**16,131**	**25,283**	**27,090**	**8,058**	**9,752**	**16,243**	**17,000**
Mississippi	6,099	6,977	6,893	10,190	10,600	441	310	593	610
Louisiana	5,145	6,414	7,034	9,715	10,200	357	231	403	350
Arkansas	13,086	12,657	11,484	14,095	14,400	294	725	292	300
DELTA STATES	**24,330**	**26,048**	**25,411**	**34,000**	**35,200**	**1,092**	**1,266**	**1,288**	**1,260**
Oklahoma	21,668	14,909	14,797	18,006	17,800	457	511	900	930
Texas	31,355	21,223	19,394	23,742	23,400	1,743	1,858	3,684	4,070
SOUTHERN PLAINS	**53,023**	**36,132**	**34,191**	**41,748**	**41,200**	**2,200**	**2,369**	**4,584**	**5,000**
Montana	16,011	11,687	11,392	13,225	13,530	121	107	101	100
Idaho	11,330	7,639	8,113	10,180	10,640	202	252	458	490
Wyoming	2,962	1,523	1,690	2,017	2,110	112	149	180	220
Colorado	11,062	6,937	7,338	8,488	8,900	1,032	1,632	2,397	2,810
New Mexico	1,898	1,041	1,229	1,541	1,620	52	117	246	270
Arizona	559	412	530	513	610	25	23	70	70
Utah	2,421	1,442	1,442	1,748	1,790	134	196	186	205
Nevada	277	201	253	269	280	9	21	3	5
MOUNTAIN STATES	**46,520**	**30,882**	**31,987**	**37,981**	**39,480**	**1,687**	**2,497**	**3,641**	**4,170**
Washington	9,706	6,891	7,330	8,471	9,100	307	269	490	520
Oregon	8,372	5,107	5,266	6,442	6,630	167	106	185	180
California	8,366	5,619	5,373	6,492	6,500	633	696	1,085	1,170
PACIFIC	**26,444**	**17,617**	**17,969**	**21,405**	**22,230**	**1,107**	**1,071**	**1,760**	**1,870**
TOTAL	**909,637**	**467,182**	**524,072**	**664,083**	**705,000**	**184,032**	**251,043**	**351,633**	**397,000**

[1]The Census in 1964 included self-propelled and pull types. The Census in 1969, 1974, 1978 and the estimated number for July 1, 1984 cover only self-propelled combines.
[2]The Census in 1969 included only corn heads on class 1-5 farms, ($2,500 or more of income). The Census in 1974, 1978 and the estimated number for July 1, 1984 cover all farms.

Principal Machines on Farms – 1984

STATE	PICK-UP BALERS 1964 Census Number	1969 Census Number	1974 Census Number	1978 Census Number	Estimated July 1, 1984 Number	FIELD FORAGE HARVESTERS[1] 1964 Census Number	1969 Census Number	1974 Census Number	1978 Census Number	Estimated July 1, 1984 Number
Maine	3,339	2,446	2,255	2,770	2,630	998	712	914	1,341	2,090
New Hampshire	1,681	1,266	1,197	1,448	1,410	747	385	612	553	720
Vermont	5,796	4,171	3,975	4,434	4,210	2,358	1,542	2,328	2,798	3,830
Massachusetts	2,343	1,774	1,600	1,900	1,780	1,412	744	923	1,185	1,610
Rhode Island	250	171	172	209	200	233	88	122	138	170
Connecticut	1,971	1,604	1,313	1,715	1,520	1,561	788	777	831	1,030
New York	38,107	31,074	27,495	30,762	28,200	20,710	13,815	17,363	20,891	27,600
New Jersey	3,073	2,357	2,066	2,458	2,180	2,181	1,171	1,127	1,255	1,420
Pennsylvania	41,873	35,571	32,195	38,745	36,200	20,794	12,240	15,485	19,187	27,850
Delaware	664	609	628	618	580	475	245	422	282	380
Maryland	6,845	5,750	5,159	6,083	5,600	3,961	2,177	2,603	2,943	4,300
NORTHEAST	**105,942**	**86,793**	**78,055**	**91,142**	**84,510**	**55,430**	**33,907**	**42,676**	**51,404**	**71,000**
Ohio	43,607	40,101	36,137	39,170	35,550	11,759	7,788	9,757	11,419	16,700
Indiana	25,459	23,414	21,705	24,655	22,500	7,523	5,344	6,121	6,912	9,630
Illinois	38,163	33,291	29,822	31,487	28,250	16,295	10,130	11,333	11,905	15,400
Iowa	60,111	55,456	47,461	47,729	41,000	20,937	14,245	17,179	19,479	26,300
Missouri	36,265	38,929	38,487	44,886	42,000	9,315	6,884	7,430	8,786	9,830
CORN BELT	**203,605**	**191,191**	**173,612**	**187,927**	**169,300**	**65,829**	**44,391**	**51,820**	**58,501**	**77,860**
Michigan	31,502	26,915	23,897	26,039	23,200	15,077	8,986	11,682	12,986	17,100
Wisconsin	63,921	56,939	54,962	59,847	57,000	48,149	27,199	38,341	43,574	60,800
Minnesota	55,896	51,600	46,689	50,534	46,000	26,024	17,761	20,825	23,437	29,650
LAKE STATES	**151,319**	**135,454**	**125,548**	**136,420**	**126,200**	**89,250**	**53,946**	**70,848**	**79,997**	**107,550**
North Dakota	15,823	15,623	14,831	15,380	13,900	9,555	6,614	5,911	5,539	5,890
South Dakota	14,441	14,657	13,835	14,258	12,850	10,810	9,755	11,254	11,364	12,160
Nebraska	19,907	18,988	17,309	17,160	15,250	13,268	11,232	12,632	13,935	15,800
Kansas	28,086	27,464	26,846	29,550	27,400	17,035	11,712	10,651	10,844	11,450
GREAT PLAINS	**78,257**	**76,732**	**72,821**	**76,348**	**69,400**	**50,668**	**39,313**	**40,448**	**41,682**	**45,300**
West Virginia	7,362	8,013	7,444	10,051	9,200	1,155	1,143	1,478	2,134	2,630
Kentucky	21,476	24,121	23,536	32,538	30,350	3,157	3,621	4,400	8,269	9,540
Tennessee	15,234	17,686	17,090	22,597	21,500	3,002	2,953	3,602	5,579	6,700
Virginia	16,105	16,035	15,285	19,222	18,000	4,450	4,181	4,675	6,343	7,350
North Carolina	10,322	10,053	10,115	12,591	12,150	3,365	2,695	3,841	4,317	5,120
APPALACHIAN	**70,499**	**75,908**	**73,470**	**96,999**	**91,200**	**15,129**	**14,593**	**17,996**	**26,642**	**31,340**
South Carolina	4,468	3,857	3,719	4,763	4,550	1,139	887	1,075	1,381	1,760
Georgia	8,917	7,118	6,678	8,909	8,530	1,696	1,455	1,722	2,652	3,440
Florida	1,419	1,692	1,910	2,885	2,880	543	447	629	916	1,390
Alabama	6,231	7,227	7,662	10,393	10,100	1,233	1,250	1,513	2,158	2,630
SOUTHEAST	**19,035**	**19,894**	**19,969**	**26,950**	**26,060**	**4,611**	**4,039**	**4,939**	**7,107**	**9,220**
Mississippi	6,618	7,045	7,431	8,752	8,350	1,697	1,531	2,130	2,168	2,530
Louisiana	5,064	4,831	4,594	6,192	5,800	775	763	872	1,872	2,110
Arkansas	6,456	7,500	8,040	11,022	10,520	1,181	1,014	1,047	1,882	2,140
DELTA STATES	**18,138**	**19,376**	**20,065**	**25,966**	**24,670**	**3,653**	**3,308**	**4,049**	**5,922**	**6,780**
Oklahoma	12,965	14,246	14,432	20,032	19,350	2,820	1,872	1,740	2,420	2,740
Texas	15,737	18,208	18,534	28,338	28,250	4,643	3,556	3,215	5,451	6,200
SOUTHERN PLAINS	**28,702**	**32,454**	**32,966**	**48,370**	**47,600**	**7,463**	**5,428**	**4,955**	**7,871**	**8,940**
Montana	11,458	11,059	10,613	11,857	11,150	1,736	1,695	1,512	2,130	2,440
Idaho	13,072	12,057	12,048	13,043	12,850	2,696	1,907	2,048	2,435	2,900
Wyoming	4,259	4,357	4,383	4,572	4,560	1,086	924	995	1,267	1,550
Colorado	9,600	9,504	9,505	10,564	10,600	5,252	3,744	3,755	4,418	5,140
New Mexico	2,340	2,532	2,833	3,427	3,540	560	490	591	786	1,000
Arizona	1,001	860	1,018	1,081	1,100	556	231	314	341	520
Utah	6,389	5,887	5,957	7,171	7,200	1,989	1,378	1,560	1,909	2,330
Nevada	1,264	1,177	1,299	1,524	1,510	291	189	233	367	500
MOUNTAIN STATES	**49,383**	**47,433**	**47,656**	**53,239**	**52,510**	**14,166**	**10,608**	**11,008**	**13,653**	**16,380**
Washington	9,759	8,658	8,215	9,327	9,250	3,734	1,837	2,234	3,019	5,220
Oregon	8,007	7,218	7,195	9,207	9,040	2,419	1,532	1,496	2,718	3,740
California	8,389	6,829	6,435	6,832	6,260	3,189	1,666	2,006	2,628	4,670
PACIFIC	**26,155**	**22,705**	**21,845**	**25,366**	**24,550**	**9,342**	**5,035**	**5,736**	**8,365**	**13,630**
TOTAL	**751,035**	**707,940**	**666,007**	**768,727**	**716,000**	**315,541**	**214,568**	**254,475**	**301,144**	**388,000**

[1]The Census in 1964 and the estimated number for July 1, 1984 includes shear-bar and flail types. The Census in 1969, 1974 and 1978 covered only the number of shear-bar harvesters.

Principal Machines on Farms – 1984

STATE	POWER TRACTOR MOWERS (Cutter bar type only) Estimated July 1,1958 Number	POWER TRACTOR MOWERS (Cutter bar type only) Estimated July 1, 1984 Number	SIDE DELIVERY RAKES Estimated July 1, 1958 Number	SIDE DELIVERY RAKES Estimated July 1, 1984 Number	MOWER CONDITIONERS[1] 1974 Census Number	MOWER CONDITIONERS[1] 1978 Census Number	MOWER CONDITIONERS[1] Estimated July 1, 1984 Number
Maine	9,000	7,250	10,000	6,300	1,378	2,092	2,610
New Hampshire	4,400	3,300	5,000	2,680	605	1,029	1,270
Vermont	10,000	9,720	10,300	7,890	2,776	4,104	5,360
Massachusetts	5,800	4,320	6,000	3,780	1,048	1,568	1,890
Rhode Island	550	370	500	340	102	144	160
Connecticut	4,500	3,800	4,000	2,670	786	1,234	1,600
New York	55,000	60,300	61,000	50,000	18,701	26,674	33,800
New Jersey	7,000	4,950	8,000	4,280	1,636	2,518	2,620
Pennsylvania	60,000	66,700	67,000	52,700	20,428	30,551	35,800
Delaware	1,750	1,170	2,200	1,110	525	603	830
Maryland	14,000	12,400	13,000	9,650	3,614	4,944	5,800
NORTHEAST	**172,000**	**174,280**	**187,000**	**141,390**	**51,599**	**75,461**	**91,740**
Ohio	70,000	70,700	86,000	60,700	20,268	28,007	33,800
Indiana	64,000	55,500	71,000	44,700	12,503	16,162	20,800
Illinois	106,000	77,800	86,000	58,300	18,793	21,817	29,400
Iowa	115,000	116,500	127,000	97,900	19,636	26,631	34,450
Missouri	80,000	93,800	50,000	57,400	17,228	24,047	32,850
CORN BELT	**435,000**	**414,300**	**420,000**	**319,000**	**88,428**	**116,664**	**151,300**
Michigan	48,000	53,000	35,000	47,200	15,924	22,066	25,850
Wisconsin	93,000	114,500	115,000	98,000	36,232	52,723	67,000
Minnesota	96,000	106,000	108,000	95,500	22,979	32,101	38,650
LAKE STATES	**237,000**	**273,500**	**308,000**	**240,700**	**75,135**	**106,890**	**131,500**
North Dakota	42,000	44,500	26,000	25,000	5,971	6,395	8,570
South Dakota	44,000	51,900	31,000	25,500	4,445	5,715	6,330
Nebraska	61,000	60,800	41,000	38,800	9,225	15,128	15,500
Kansas	62,000	60,300	42,000	40,000	9,247	17,520	17,350
GREAT PLAINS	**209,000**	**217,500**	**140,000**	**129,300**	**28,888**	**44,758**	**47,750**
West Virginia	14,000	20,500	8,000	10,600	3,484	5,401	5,870
Kentucky	48,000	55,200	28,000	34,500	14,718	24,497	26,280
Tennessee	47,000	59,200	25,500	27,380	12,037	17,526	20,970
Virginia	28,000	36,400	25,500	26,500	8,714	13,099	16,170
North Carolina	27,000	35,800	15,000	17,800	6,824	10,767	11,550
APPALACHIAN	**164,000**	**207,100**	**102,000**	**116,780**	**45,777**	**71,290**	**80,840**
South Carolina	12,500	11,400	7,500	6,720	2,471	3,612	4,210
Georgia	23,000	19,700	12,000	11,940	6,383	9,451	10,000
Florida	7,500	4,300	2,200	2,150	4,000	7,114	7,500
Alabama	19,000	19,000	7,300	8,500	5,367	8,834	9,270
SOUTHEAST	**62,000**	**54,400**	**29,000**	**29,310**	**18,221**	**29,011**	**30,980**
Mississippi	21,000	24,600	5,000	11,000	5,282	8,041	8,200
Louisiana	12,000	12,400	6,000	7,020	4,421	7,396	7,560
Arkansas	24,000	23,700	12,000	11,750	5,521	8,653	10,500
DELTA STATES	**57,000**	**60,700**	**23,000**	**29,770**	**15,224**	**24,090**	**26,260**
Oklahoma	37,000	36,700	22,000	22,300	7,703	15,717	16,800
Texas	48,000	53,500	21,000	25,800	19,487	34,266	37,900
SOUTHERN PLAINS	**85,000**	**90,200**	**43,000**	**48,100**	**27,190**	**49,983**	**54,700**
Montana	23,000	24,400	15,000	15,680	3,205	7,513	8,990
Idaho	27,000	24,300	23,000	18,500	3,367	9,282	10,250
Wyoming	10,500	6,950	6,000	5,900	1,179	3,530	4,010
Colorado	24,000	18,000	25,000	16,300	2,712	7,449	8,320
New Mexico	8,000	5,340	8,000	4,770	1,005	2,451	3,190
Arizona	4,500	2,300	3,700	1,600	427	841	950
Utah	11,700	12,500	12,000	10,600	2,257	5,292	5,720
Nevada	2,300	1,780	2,300	1,700	384	1,286	1,540
MOUNTAIN STATES	**111,000**	**95,570**	**95,000**	**75,050**	**14,536**	**37,644**	**42,970**
Washington	27,000	24,000	16,000	15,300	4,218	8,536	9,720
Oregon	23,000	22,450	15,000	13,500	3,634	7,487	8,350
California	33,000	27,000	22,000	15,800	3,590	8,129	9,890
PACIFIC	**83,000**	**73,450**	**53,000**	**44,600**	**11,442**	**24,152**	**27,960**
TOTAL	**1,615,000**	**1,661,000**	**1,400,000**	**1,174,000**	**376,440**	**579,943**	**686,000**

[1]Does not include windrowers with conditioning rolls.

Principal Machines on Farms – 1984

STATE	POWER ELEVATORS Estimated July 1, 1951 Number	POWER ELEVATORS Estimated July 1, 1958 Number	POWER ELEVATORS Estimated July 1, 1984 Number	Manure Spreaders Estimated July 1, 1984 Number	Corn and Cotton Planters Estimated July 1, 1984 Number	Grain Drills Estimated July 1, 1984 Number
Maine			5,430	3,350	350	920
New Hampshire			2,570	2,130	310	65
Vermont	1,200	12,000	8,240	6,720	1,720	345
Massachusetts			3,700	2,450	940	120
Rhode Island			520	290	110	35
Connecticut			4,310	2,580	1,100	90
New York	7,200	35,000	71,800	42,900	21,200	28,850
New Jersey	2,000	5,500	6,310	2,570	2,580	2,630
Pennsylvania	9,600	38,000	76,500	44,400	36,000	43,400
Delaware	500	2,000	4,040	1,870	2,280	2,180
Maryland	2,500	7,500	16,830	8,950	9,270	9,640
NORTHEAST	**23,000**	**100,000**	**200,250**	**118,210**	**75,860**	**88,275**
Ohio	27,000	68,000	131,200	60,000	68,800	68,900
Indiana	30,000	66,000	130,300	53,100	70,600	55,900
Illinois	61,000	110,000	198,800	77,700	103,000	70,500
Iowa	80,000	122,000	208,800	106,000	114,500	65,700
Missouri	15,000	41,000	92,900	59,500	54,600	56,800
CORN BELT	**213,000**	**407,000**	**762,000**	**356,300**	**411,500**	**317,800**
Michigan	14,000	45,000	93,100	39,200	41,650	55,500
Wisconsin	15,000	48,000	146,700	89,700	73,400	70,500
Minnesota	46,000	90,000	164,300	81,500	88,300	81,600
LAKE STATES	**75,000**	**183,000**	**404,100**	**210,400**	**203,350**	**207,600**
North Dakota	28,000	45,000	79,700	22,100	16,550	64,750
South Dakota	24,000	40,000	70,800	30,800	33,300	36,600
Nebraska	36,000	60,000	109,700	47,200	49,600	47,000
Kansas	25,000	55,000	117,000	39,600	24,300	76,500
GREAT PLAINS	**113,000**	**200,000**	**377,200**	**139,700**	**123,750**	**224,850**
West Virginia	500	3,000	7,040	8,950	5,720	4,010
Kentucky	2,500	10,000	27,270	29,500	42,250	12,350
Tennessee	1,000	6,500	16,780	21,600	57,000	15,450
Virginia	2,000	11,000	21,100	23,100	28,750	18,750
North Carolina	1,000	7,500	22,750	22,500	80,300	25,200
APPALACHIAN	**7,000**	**38,000**	**94,940**	**105,650**	**214,020**	**75,760**
South Carolina	300	2,000	5,170	4,180	33,900	13,000
Georgia	900	6,000	15,420	7,080	42,650	11,150
Florida	300	1,500	4,090	1,280	6,550	1,930
Alabama	500	4,500	12,680	4,720	46,600	7,830
SOUTHEAST	**2,000**	**14,000**	**37,360**	**17,260**	**129,700**	**33,910**
Mississippi	700	4,500	8,660	5,390	58,000	9,220
Louisiana	400	1,000	2,830	3,100	20,250	8,230
Arkansas	900	4,500	10,570	7,570	23,900	14,800
DELTA STATES	**2,000**	**10,000**	**22,060**	**16,060**	**102,150**	**32,250**
Oklahoma	6,000	12,000	28,200	9,830	10,200	35,900
Texas	9,000	23,000	44,860	18,600	61,300	56,000
SOUTHERN PLAINS	**15,000**	**35,000**	**73,060**	**28,430**	**71,500**	**91,900**
Montana	7,500	17,500	31,350	11,600	1,210	24,200
Idaho	3,100	13,300	27,380	14,450	2,930	17,650
Wyoming	700	2,500	5,630	4,960	1,060	4,710
Colorado	7,000	13,000	28,230	14,750	6,890	17,650
New Mexico	500	1,500	2,880	2,410	3,500	2,230
Arizona	100	700	2,020	1,030	2,130	1,630
Utah	700	5,000	11,270	8,010	1,880	6,250
Nevada	400	500	1,050	1,180	70	365
MOUNTAIN STATES	**20,000**	**54,000**	**109,810**	**58,390**	**19,670**	**74,685**
Washington	2,000	8,000	24,360	15,300	2,030	14,280
Oregon	3,000	8,000	19,640	13,470	1,270	13,390
California	4,000	13,000	26,220	15,830	10,200	10,300
PACIFIC	**9,000**	**29,000**	**70,220**	**44,600**	**13,500**	**37,970**
TOTAL	**479,000**	**1,070,000**	**2,151,000**	**1,095,000**	**1,365,000**	**1,185,000**

Principal Machines on Farms – 1984

STATE	MOTOR TRUCKS							Internal Combustion Engines[2]	Chain Saws
	1954 Adj. Cen. 1,000's[1]	1959 Census 1,000's	1964 Census 1,000's	1969 Census 1,000's	1974 Census 1,000's	1978 Census 1,000's	Estimated July 1, 1984 1,000's	Estimated July 1, 1984 Number	Estimated July 1, 1984 Number
Maine	18.1	17.3	14.8	12.1	11.3	13.5	13.5	1,730	8,650
New Hampshire	8.3	6.8	5.6	4.0	3.7	4.4	4.4	1,620	2,870
Vermont	11.1	10.0	8.1	6.1	6.2	7.9	8.0	2,260	7,160
Massachusetts	14.3	12.3	10.6	8.4	7.7	9.9	10.1	2,330	5,230
Rhode Island	1.9	1.9	1.8	1.2	1.2	1.5	1.5	240	730
Connecticut	13.2	11.0	9.9	7.4	6.2	7.5	7.5	2,060	4,400
New York	70.5	66.5	62.9	53.6	53.6	61.2	62.2	26,900	57,600
New Jersey	24.4	20.9	17.3	14.3	12.9	16.5	16.8	3,000	6,900
Pennsylvania	71.0	71.4	69.5	57.3	55.5	66.3	67.2	26,500	50,500
Delaware	5.2	5.3	5.2	5.1	5.7	6.5	6.6	1,210	2,910
Maryland	22.0	21.2	21.3	19.5	21.3	25.5	26.1	5,880	14,160
NORTHEAST	**260.0**	**244.6**	**227.0**	**189.0**	**185.3**	**220.7**	**223.9**	**73,730**	**161,110**
Ohio	77.0	81.5	91.4	93.7	97.8	112.9	114.9	25,200	70,050
Indiana	77.4	88.2	99.0	100.1	103.9	120.2	122.2	25,900	75,550
Illinois	99.9	113.7	120.9	129.3	139.9	155.4	158.2	38,500	81,900
Iowa	84.3	99.8	106.7	121.4	137.1	148.0	150.7	40,800	65,100
Missouri	95.8	109.7	123.0	132.5	134.0	162.5	165.5	41,800	108,950
CORN BELT	**434.4**	**492.9**	**541.0**	**577.0**	**612.7**	**699.0**	**711.5**	**172,200**	**401,550**
Michigan	70.5	75.7	80.5	74.6	73.6	83.4	84.8	23,100	52,550
Wisconsin	87.0	90.6	97.0	89.0	92.3	100.9	102.8	44,300	106,750
Minnesota	90.0	103.4	112.5	116.9	130.1	147.4	150.2	59,900	76,300
LAKE STATES	**247.5**	**269.7**	**290.0**	**280.5**	**296.0**	**331.7**	**337.8**	**127,300**	**235,600**
North Dakota	66.8	75.5	81.6	91.2	101.3	109.2	111.0	44,600	4,950
South Dakota	47.7	52.3	56.5	57.8	65.1	66.9	68.2	30,000	3,800
Nebraska	72.0	83.4	93.1	96.4	108.5	120.5	122.5	40,800	16,200
Kansas	112.1	122.3	134.0	141.3	150.9	164.4	167.5	52,800	26,750
GREAT PLAINS	**298.6**	**333.5**	**365.2**	**386.7**	**425.8**	**461.0**	**469.2**	**168,200**	**51,700**
West Virginia	26.0	24.7	24.1	19.5	16.9	21.8	22.0	6,280	24,950
Kentucky	66.7	74.9	90.5	97.1	95.8	125.4	127.6	20,600	51,500
Tennessee	71.6	76.8	86.3	92.8	88.1	104.6	106.4	15,700	68,000
Virginia	57.5	58.0	59.2	55.9	55.5	70.1	71.1	15,200	56,300
North Carolina	84.5	91.1	101.1	99.3	93.5	113.5	115.5	19,800	100,750
APPALACHIAN	**306.3**	**325.5**	**361.2**	**364.6**	**349.8**	**435.4**	**442.6**	**77,580**	**301,500**
South Carolina	39.2	39.1	39.0	35.3	33.7	40.5	41.0	7,850	28,480
Georgia	76.2	72.8	76.6	70.9	69.2	79.8	81.1	16,200	39,250
Florida	36.6	36.4	40.6	37.8	40.1	54.1	54.9	15,700	8,960
Alabama	63.7	63.4	69.5	67.4	64.4	75.1	76.3	13,250	36,950
SOUTHEAST	**215.7**	**211.7**	**225.7**	**211.4**	**207.4**	**249.5**	**253.3**	**53,000**	**113,640**
Mississippi	76.2	71.5	75.1	66.4	60.5	65.5	66.3	12,750	43,650
Louisiana	47.3	47.2	51.3	44.7	41.6	50.4	51.0	15,200	23,930
Arkansas	76.2	73.2	80.6	71.4	69.5	88.0	89.1	17,200	36,650
DELTA STATES	**199.7**	**191.9**	**207.0**	**182.5**	**171.6**	**203.9**	**206.4**	**45,150**	**104,230**
Oklahoma	85.7	92.7	105.1	106.8	101.6	126.2	127.9	26,000	11,840
Texas	187.8	197.8	211.0	227.6	208.1	257.3	257.5	77,700	23,130
SOUTHERN PLAINS	**273.5**	**290.5**	**316.1**	**334.4**	**309.7**	**383.5**	**385.4**	**103,700**	**34,970**
Montana	48.5	52.8	58.2	58.3	61.9	68.9	70.2	23,400	14,130
Idaho	38.7	44.0	48.3	47.1	51.4	59.2	60.3	19,250	15,660
Wyoming	15.0	16.2	17.7	18.4	19.2	20.6	21.2	7,660	3,810
Colorado	48.5	51.7	55.9	55.5	56.9	66.4	67.7	24,600	7,210
New Mexico	21.3	20.3	23.4	18.8	20.0	26.4	27.1	9,230	3,600
Arizona	13.5	16.8	17.2	12.1	14.4	16.8	17.2	6,240	610
Utah	18.0	18.8	20.3	18.3	19.4	22.7	23.3	8,000	2,850
Nevada	3.9	4.5	4.5	5.0	5.4	6.5	6.6	1,860	720
MOUNTAIN STATES	**207.4**	**225.1**	**245.5**	**233.5**	**248.6**	**287.5**	**293.6**	**100,240**	**48,590**
Washington	55.4	60.2	64.2	56.7	57.1	71.4	73.1	20,100	27,180
Oregon	47.7	48.9	53.6	46.2	49.6	60.8	62.0	26,000	30,780
California	128.8	131.0	126.1	115.7	118.8	142.7	145.2	77,800	38,150
PACIFIC	**231.9**	**240.1**	**243.9**	**218.6**	**225.5**	**274.9**	**280.3**	**123,900**	**96,110**
TOTAL	**2,675.0**	**2,825.5**	**3,022.6**	**2,978.2**	**3,032.4**	**3,547.1**	**3,604.0**	**1,045,000**	**1,549,000**

[1]Census numbers have been adjusted to bring them more in line with 1959 and later data based on the new definition of a farm.
[2]Includes engines used for stationary work such as irrigation, auxiliary engines on combines, balers, etc., and a small number of power units not elsewhere classified.

Measuring Three Industries: Materials Consumed in 1982 and 1977

■EVERY FIVE years, the U.S. Census Bureau takes the pulse of manufacturers.

Presented here are the preliminary data for the materials consumed by three major industry segments covered by *Implement & Tractor:* the farm, lawn-and-garden and construction equipment manufacturers.

As is frequently the case, some information presented here is limited to "delivered cost" of some types of materials, parts, containers and supplies because information about certain quantities cannot be collected or estimated properly.

To protect the identity of certain manufacturers, some data are not reported individually, although the information is included in the totals of all materials consumed.

The tables also do not reflect anything about certain materials that are produced and consumed by the individual companies rather than purchased outside. As a result, items like castings, forgings, engines and electric motors, which some companies produce themselves, do not show up in either the quantity or dollar column amounts.

The preliminary data presented here are subject to change, and will ultimately be superseded by a final report that will become part of Volume II, Industry Statistics, 1982 Census of Manufacturers.

On the cover... Endless rubber belts are installed on a hay baler at the New Idea plant in Coldwater, Ohio, adding a few more digits to the statistics on materials consumed by industry. Photo courtesy Goodyear Rubber Co.

How the Farm Equipment Industry Consumed Materials: 1977 and 1982

Material		1982 Quantity[1]	1982 Delivered cost (million dollars)	1977 Quantity[1]	1977 Delivered cost (million dollars)
Total materials, parts, containers, and supplies		(X)	4 868.8	(X)	5 030.4
Mill shapes and forms, except castings and forgings:					
Carbon steel:					
Bars and bar shapes		*327.0	171.2	560.1	220.6
Sheet and strip		*519.2	255.7	968.6	311.1
Plates		*115.1	63.3	249.5	89.1
Structural shapes		**81.8	39.2	*177.9	62.7
Wire and wire products	1,000 short tons	(S)	8.5	*32.1	18.6
All other carbon steel mill shapes and forms		*174.3	89.1	*237.4	103.8
Alloy steel, except stainless:					
Bars and bar shapes		*30.7	21.2	*56.3	25.5
All other alloy steel mill shapes and forms		(S)	6.5	(S)	9.5
Stainless steel mill shapes and forms:					
Sheet and strip		(S)	7.0	(S)	15.8
All other stainless steel mill shapes		(S)	2.6	(S)	2.1
Copper and copper-base alloy:					
All but pipe and tube		(S)	2.9	.1	5.2
Pipe and tube		*23.5	16.9	(S)	13.5
Aluminum and aluminum-base alloy:					
Sheet, plate, and foil	million lbs.	**3.8	2.9	**9.9	6.7
All other mill and extruded shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.)		*4.0	5.6	**15.2	14.8
Metal powders		(S)	.6	16.0	3.5
Metal stampings		(X)	68.0	(X)	48.2
Pig iron, excluding silvery iron		*20.0	4.6	31.3	5.9
Iron and steel scrap, excluding home scrap	1,000 short tons	65.4	19.2	166.1	18.8
Castings (rough and semifinished):					
Iron (gray and malleable):		*288.2	220.2	421.2	371.4
Steel:		111.2	41.8	18.0	20.7
Aluminum and aluminum-base alloy:		16.8	18.3	(S)	15.9
Copper and copper-base alloy:	million lbs.	(S)	5.7	(X)	(*)
Other nonferrous:	1,000 short tons	16.7	5.9	(X)	(*)
Iron and steel forgings:		**59.0	89.9	*99.0	96.9
Steel springs, except wire		*7.7	9.9	(X)	(*)
Fluid power (hydraulic and pneumatic) valves		(X)	25.4	(X)	(*)
Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies		(X)	30.5	(X)	(*)
Engines:					
Diesel and semidiesel:	thousands	94.5	380.3	199.6	432.3
Gasoline and other carburetor:		**171.3	27.3	163.9	42.7

(More...)

Materials Consumed *(continued)*

Material		1982 Quantity[1]	1982 Delivered cost (million dollars)	1977 Quantity[1]	1977 Delivered cost (million dollars)
Electric motors and generators:					
Fractional horsepower electric motors	thousands	.5	12.3	**226.6	11.1
Integral horsepower motors and generators (1 hp or more):		.6	11.7	*205.1	23.0
Bearings:					
Ball		(X)	63.6	(X)	57.5
Roller		(X)	34.6	(X)	43.2
Plain bearings and bushings		(X)	15.9	(X)	16.6
Speed changers, drives, gears, and industrial high speed drives		(X)	124.6	(X)	121.9
Pumps (complete assemblies):					
Hydraulic fluid power pumps, motors, and hydrostatic transmissions	thousands	*823.3	99.6		
Other pumps	thousands	(S)	9.0	592.1	49.4
Fluid power (hydraulic and pneumatic) cylinders and rotary actuators		(X)	32.4	(X)	
Hydraulic and pneumatic equipment, except pumps, compressors, valves, cylinders, and rotary actuators		(X)	45.0	(X)	95.4
Engine electrical equipment		(X)	65.7	(X)	61.7
Pneumatic tires and inner tubes	thousands	*52.6	192.1	5 660.0	208.4
Semi-pneumatic tires	thousands	*3.9	11.8	[3]	[3]
Rough and dressed lumber		(S)	9.1	[3]	[3]
Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products	1,000 gal.	*5 008.9	36.2	*5 113.2	29.5
Rubber and plastics hose and belting		(X)	33.5	(X)	[3]
Fabricated rubber products, except tires, tubes, hoses, beltings, and gaskets		(X)	32.4	(X)	29.9
Fabricated plastic products, except gaskets		(X)	41.9	(X)	24.8
Bolts, nuts, screws, rivets, and screw machine products		(X)	87.8	(X)	96.3
Wire chain		(X)	2.1	(X)	[3]
Cutting tools for machine tools		(X)	17.5	(X)	[3]
All other materials and components, parts, containers, and supplies		(X)	1 440.0	(X)	1 648.3
Materials, parts, containers, and supplies, not specified by kind[2]		(X)	809.9	(X)	550.3

How the Lawn & Garden Equipment Industry Consumed Materials: 1977 and 1982

Total materials, parts, containers, and supplies		**(X)**	**1 301.4**	**(X)**	**909.1**
Mill shapes and forms, except castings and forgings:					
Carbon steel:					
Bars and bar shapes	1,000 short tons	*48.7	21.3	*32.9	14.6
Sheet and strip	1,000 short tons	*147.6	65.7	118.8	49.9
Plates	1,000 short tons	**2.0	1.0	(S)	1.9
Structural shapes	1,000 short tons	*2.7	2.2	(S)	1.7
Wire and wire products	1,000 short tons	(S)	1.4	**6.9	4.0
All other carbon steel mill shapes and forms	1,000 short tons	**9.7	4.6	(S)	6.2
Alloy steel, except stainless	1,000 short tons	(S)	4.0	(S)	.3
Stainless steel mill shapes and forms:	1,000 short tons	(D)	(D)	(D)	10.2
Copper and copper-base alloy:	million lbs.	(S)	.5	(D)	1.1
Aluminum and aluminum-base alloy:	million lbs.	(S)	7.6	9.7	11.3
Metal powders	million lbs.	*7.7	9.8	(S)	7.3
Metal stampings		(X)	32.2	(X)	29.1
Pig iron, excluding silvery iron	1,000 short tons	(D)	(D)	–	–
Iron and steel scrap, excluding home scrap	1,000 short tons	(D)	(D)	(D)	(D)
Castings (rough and semifinished):					
Iron (gray and malleable):	1,000 short tons	*9.4	10.7	(S)	16.3
Steel:	1,000 short tons	(S)	3.5	1.0	.8

(More...)

Materials Consumed *(continued)*

Material		1982 Quantity[1]	1982 Delivered cost (million dollars)	1977 Quantity[1]	1977 Delivered cost (million dollars)
Aluminum and aluminum-base alloy:	million lbs.	*52.7	33.5	*31.0	20.1
Copper and copper-base alloy:	million lbs.	(D)	(D)	(X)	[3]
Other nonferrous:	million lbs.	18.6	5.6	(X)	[3]
Iron and steel forgings:	1,000 short tons	**1.5	2.8	(S)	2.9
Steel springs, except wire	1,000 short tons	(S)	.6	(X)	[3]
Fluid power (hydraulic and pneumatic) valves		(X)	2.2	(X)	[3]
Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies		(X)	.9	(X)	[3]
Engines:					
Diesel and semidiesel:		(S)	11.5	(D)	(D)
Gasoline and other carburetor:	thousands	*3 300.9	294.1	4 718.0	285.0
Electric motors and generators:					
Fractional horsepower electric motors		354.5	3.5	3,358.0	12.2
Bearings:					
Ball		(X)	7.7	(X)	5.5
Roller		(X)	4.1	(X)	3.6
Plain bearings and bushings		(X)	16.1	(X)	5.2
Speed changers, drives, gears, and industrial high speed drives		(X)	(D)	(X)	29.6
Pumps (complete assemblies):					
Hydraulic fluid power pumps, motors, and hydrostatic transmissions	thousands	*114.0	10.1	(D)	(D)
Filters for hydraulic fluid power systems		(X)	(D)	(X)	
Fluid power (hydraulic and pneumatic) cylinders and rotary actuators		(X)	1.7	(X)	
Hydraulic and pneumatic equipment, except pumps, compressors, valves, cylinders, and rotary actuators		(X)	(D)	(X)	6.3
Engine electrical equipment, spark plugs, magnetos, generators, starters, etc.		(X)	7.8	(X)	10.5
Pistons, piston rings, carburetors, and valves (intake and exhaust only)		(X)	(D)	(X)	3.4
Pneumatic tires and inner tubes	thousands	(S)	26.6	**8 165.0	26.3
Semi-pneumatic tires	thousands	*14.2	11.1	[3]	[3]
Rough and dressed lumber		(S)	1.3	[3]	[3]
Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products	1,000 gal.	(S)	6.1	779.5	5.0
Rubber and plastics hose and belting		(X)	7.0	(X)	[3]
Fabricated rubber products, except tires, tubes, hoses, beltings, and gaskets		(X)	6.4	(X)	4.3
Fabricated plastic products, except gaskets		(X)	41.9	(X)	25.9
Bolts, nuts, screws, rivets, and screw machine products		(X)	26.5	(X)	23.6
All other materials and components, parts, containers, and supplies		(X)	332.8	(X)	249.1
Materials, parts, containers, and supplies, not specified by kind[2]		(X)	222.2	(X)	32.6

How the Construction Machinery Industry Consumed Materials: 1977 and 1982

Total materials, parts, containers, and supplies		**(X)**	**5,572.1**	**(X)**	**6,186.6**
Mill shapes and forms, except castings and forgings:					
Carbon steel:					
Bars and bar shapes	1,000 short tons	(S)	158.9	**328.0	131.2
Sheet and strip	1,000 short tons	**156.1	78.7	*270.1	91.3
Plates	1,000 short tons	(S)	304.3	1 291.2	462.5
Structural shapes	1,000 short tons	(S)	68.0	*321.5	111.9
Wire and wire products	1,000 short tons	(S)	12.1	(S)	9.9
All other carbon steel mill shapes and forms	1,000 short tons	(S)	119.2	*264.2	124.4
Alloy steel, except stainless:					
Bars and bar shapes	1,000 short tons	(S)	60.8	*81.7	63.3
All other alloy steel mill shapes and forms	1,000 short tons	**34.2	36.3	113.8	61.9
Stainless steel mill shapes and forms:	1,000 short tons	(S)	2.0	(S)	7.2

(More...)

Materials Consumed *(continued)*

Material		1982 Quantity[1]	1982 Delivered cost (million dollars)	1977 Quantity[1]	1977 Delivered cost (million dollars)
Copper and copper-base alloy:	million lbs.	(S)	6.8	9.7	11.2
Aluminum and aluminum-base alloy:	million lbs.	(S)	11.3	*1.9	13.7
Metal powders	million lbs.	(S)	6.9	17.2	9.9
Metal stampings	1,000 short tons	(S)	7.0	(X)	12.2
Pig iron, excluding silvery iron	1,000 short tons	(S)	12.4	(82.8	9.8
Iron and steel scrap, excluding home scrap	1,000 short tons	(S)	277.4	342.5	337.7
Iron and steel forgings:	1,000 short tons				
Castings (rough and semifinished):	1,000 short tons				
Iron (gray and malleable):	1,000 short tons	(S)	245.7	*270.2	344.8
Steel:	1,000 short tons	(S)	289.7	*188.6	347.9
Aluminum and aluminum-base alloy:	million lbs.	(S)	26.6	56.3	42.2
Copper and copper-base alloy:	million lbs.	(S)	6.0	(S)	3.3
Other nonferrous:	million lbs.	(S)	3.1	(X)	[3]
Engines:					
Diesel and semidiesel:	thousands	.1	372.9	100.0	493.6
Gasoline and other carburetor:	thousands	(S)	26.8	*91.4	51.8
Integral horsepower motors and generators (1 hp or more):	thousands	(S)	43.8	**64.7	88.7
Valves:					
Fluid power (hydraulic and pneumatic) and others		(X)	74.6	(X)	55.6
Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies		(X)	37.8	(X)	[3]
Pumps (complete assemblies&					
Hydraulic fluid power pumps, motors, and hydrostatic transmissions, all other pumps	thousands	(S)	125.1	(X)	114.4
Air and gas compressors, except refrigeration compressors	thousands	(S)	5.6	(S)	22.7
Bearings:					
Ball		(X)	57.7	(X)	50.0
Roller		(X)	65.5	(X)	69.7
Filters for hydraulic fluid power systems		(X)	5.3	(X)	[3]
Fluid power (hydraulic and pneumatic) cylinders and rotary actuators		(X)	89.2	(X)	[3]
Pneumatic tires and inner tubes	thousands	(S)	142.0	7 417.0	202.3
Speed changers, drives, gears, and industrial high speed drives		(X)	231.6	(X)	313.4
Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products		(S)	24.3	(X)	19.8
Rubber and plastics hose and belting		(X)	52.8	(X)	[3]
Fabricated rubber products, except tires, tubes, hoses, beltings, and gaskets		(X)	9.7	(X)	12.3
Fabricated plastics products, except gaskets		(X)	8.5	(X)	6.0
Bolts, nuts, screws, rivets, and screw machine products		(X)	48.0	(X)	83.2
Fabricated structural metal products		(X)	100.8	(X)	121.6
Fabricated wire products, including wire rope, cable, springs, etc.		(S)	43.1	(X)	41.4
Cutting tools for machine tools		(X)	43.6	(X)	13.8
All other materials and components, parts, containers, and supplies		(X)	[3] 1 690.5	(X)	[3] 1 897.1
Materials, parts, containers, and supplies, not specified by kind[2]		(X)	539.7	(X)	332.3

(1) Some surveyed manufacturers submit estimates for line-item data. A single asterisk (*) indicates a figure containing 10 to 19 per cent estimated data. A double asterisk (**) indicates 20 to 29 per cent estimated data.
(2) Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.
(3) Data combined with second-to-last category "All other materials and components, parts, containers and supplies."
(-) Indicates zero.
(D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(S) Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X) Not applicable.

FARM WHEEL TRACTOR
RETAIL SALES BY STATE, 1980-1983

State	1980			1981			1982			1983		
	2-wheel Drive 40 PTO HP & over	4-wheel Drive	Total Tractors	2-wheel Drive 40 PTO HP & over	4-wheel Drive	Total Tractors	2-wheel Drive 40 PTO HP & over	4-wheel Drive	Total Tractors	2-wheel Drive	4-wheel Drive	Total Tractors
Alabama	2,137	65	2,202	1,738	28	1,766	1,108	14	1,122	2,325	3	2,328
Alaska	25	6	31	56	1	57	10	-----	10	78	-----	78
Arizona	889	104	993	814	85	899	425	73	498	619	27	646
Arkansas	2,937	348	3,285	2,686	328	3,014	1,772	125	1,897	3,582	139	3,721
California	4,373	445	4,818	3,948	453	4,401	2,976	251	3,227	5,040	214	5,254
Colorado	1,101	230	1,331	982	218	1,200	634	121	755	1,188	126	1,314
Connecticut	230	6	236	175	2	177	145	2	147	491	–2	489
Delaware	137	9	146	108	3	111	79	5	84	258	4	262
Florida	2,479	114	2,593	2,314	70	2,384	1,636	55	1,691	3,622	68	3,690
Georgia	2,893	51	2,944	2,404	28	2,432	1,821	27	1,848	3,660	6	3,666
Hawaii	77	2	79	59	7	66	37	2	39	141	-----	141
Idaho	1,245	206	1,451	1,287	264	1,551	812	197	1,009	1,013	131	1,144
Illinois	5,551	891	6,442	4,529	871	5,400	3,580	600	4,180	4,658	433	5,091
Indiana	3,266	515	3,781	2,399	396	2,795	1,807	289	2,096	2,837	197	3,034
Iowa	6,363	773	7,136	5,437	654	6,091	4,319	475	4,794	4,149	284	4,433
Kansas	3,555	767	4,322	2,646	505	3,151	2,353	515	2,868	2,575	403	2,978
Kentucky	3,793	78	3,871	3,107	43	3,150	2,609	23	2,632	3,244	21	3,265
Louisiana	2,666	264	2,930	2,525	204	2,729	1,607	66	1,673	4,143	64	4,207
Maine	241	3	244	252	7	259	242	3	245	549	1	550
Maryland	691	32	723	563	18	581	492	14	506	1,440	17	1,457
Massachusetts	141	1	142	153	-----	153	144	1	145	517	-----	517
Michigan	2,588	349	2,937	2,353	376	2,729	1,613	197	1,810	2,569	143	2,712
Minnesota	4,533	767	5,300	4,130	645	4,775	2,793	479	3,272	3,029	386	3,415
Mississippi	3,241	260	3,501	2,478	171	2,649	1,563	71	1,634	2,571	31	2,602
Missouri	3,841	248	4,089	3,303	266	3,569	2,531	209	2,740	3,086	118	3,204
Montana	1,136	302	1,438	936	331	1,267	754	324	1,078	861	260	1,121
Nebraska	3,372	379	3,751	2,638	252	2,890	2,337	226	2,563	2,121	168	2,289
Nevada	105	12	117	72	12	84	66	5	71	79	4	83
New Hampshire	146	2	148	135	-----	135	158	-----	158	505	-----	505
New Jersey	296	4	300	224	-----	224	249	1	250	781	1	782
New Mexico	401	19	420	344	35	379	286	14	300	421	12	433
New York	2,502	115	2,617	2,210	173	2,383	1,741	77	1,818	2,825	54	2,879
North Carolina	3,495	55	3,550	2,778	50	2,828	2,022	34	2,056	4,072	12	4,084
North Dakota	1,670	905	2,575	1,885	887	2,772	1,322	740	2,062	1,354	491	1,845
Ohio	3,692	411	4,103	2,711	343	3,054	1,975	164	2,137	3,475	128	3,603
Oklahoma	2,615	373	2,988	2,334	295	2,629	1,891	279	2,170	2,557	218	2,775
Oregon	1,339	90	1,429	1,098	113	1,211	868	84	952	1,601	56	1,657
Pennsylvania	2,126	52	2,178	1,867	56	1,923	1,575	26	1,601	3,425	24	3,449
Rhode Island	16	-----	16	14	-----	14	12	-----	12	64	-----	64
South Carolina	1,416	50	1,466	1,049	32	1,081	779	17	796	1,524	10	1,534
South Dakota	1,696	287	1,983	1,450	292	1,742	1,355	238	1,593	1,230	221	1,451
Tennessee	2,940	96	3,036	2,653	57	2,710	1,923	29	1,952	3,803	20	3,823
Texas	9,423	624	10,047	10,409	580	10,989	6,886	299	7,185	13,786	308	14,094
Utah	626	34	660	583	24	607	466	23	489	655	21	676
Vermont	337	4	341	332	6	338	245	8	253	414	1	415
Virginia	2,101	25	2,126	1,618	19	1,637	1,455	15	1,470	2,677	6	2,683
Washington	1,853	200	2,053	1,371	191	1,562	1,168	134	1,302	1,951	125	2,076
West Virginia	456	-----	456	343	-----	343	325	1	326	480	1	481
Wisconsin	4,730	272	5,002	4,035	255	4,290	2,860	167	3,027	2,907	115	3,022
Wyoming	368	42	410	335	37	372	224	44	268	277	25	302
U.S. Government	220	-----	220	17	-----	17	98	-----	98	4	1	5
Miscellaneous	374	-----	374	265	-----	265	234	-----	234	605	3	608
TOTAL	**108,444**	**10,887**	**119,331**	**94,152**	**9,683**	**103,835**	**70,381**	**6,763**	**77,144**	**111,838**	**5,099**	**116,937**

Source: Farm & Industrial Equipment Institute. Figures do not include garden tractors, motor tillers or contractors' off-highway types. Tractors under 40 pto horsepower were not reported publicly by the FIEI prior to 1983. I&T estimates retail sales of such units were 46,742 in 1980; 47,800 in 1981; and 42,000 in 1982.

RETAIL SALES OF SELECTED FARM EQUIPMENT – Jan.-Dec., 1982 and 1983(1)
(In Units)

	Combines Self-Propelled		Corn Heads		Hay Balers(2)		Windrowers Self-Propelled Power Units		Windrowers Self-Propelled Total Heads		Grinder-Mixers		Shear-Bar Forage Harvesters(3)		Mower Conditioners All Types	
	1982	1983	1982	1983	1982	1983	1982	1983	1982	1983	1982	1983	1982	1983	1982	1983
Alabama	113	110	29	16	105	112	1	.....	1	.....	74	67	35	12	112	84
Alaska	.....	.....	.....	.....	12	4	.....	.....	.....	.....	1	.....	1	2	6	5
Arizona	31	9	5	1	26	17	34	34	47	39	8	1	9	4	9	6
Arkansas	308	365	7	3	102	131	.....	.....	.....	.....	48	49	7	10	239	234
California	183	91	49	33	141	110	172	150	191	172	7	2	54	56	35	35
Colorado	228	147	114	43	332	290	159	136	170	149	34	18	61	39	106	114
Connecticut	1	.....	.....	.....	39	45	.....	.....	.....	.....	1	2	34	27	73	62
Delaware	15	24	10	14	11	8	.....	1	.....	1	7	3	2	2	7	11
Florida	40	29	17	5	64	56	2	.....	2	.....	13	8	26	13	65	57
Georgia	383	197	122	82	146	128	1	8	2	8	129	66	53	25	157	134
Hawaii	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Idaho	291	231	9	6	367	288	209	160	215	184	26	18	26	40	109	102
Illinois	1,714	1,417	1,790	1,342	199	217	7	11	8	12	312	281	140	116	464	455
Indiana	721	778	775	719	186	212	4	3	5	5	205	215	88	84	329	409
Iowa	1,895	1,411	1,904	1,323	231	193	82	39	102	46	749	703	278	187	689	585
Kansas	1,377	852	141	82	218	199	140	154	158	156	160	88	126	69	485	420
Kentucky	178	128	117	87	186	182	4	6	6	5	177	127	105	69	619	717
Louisiana	128	144	6	2	66	68	.....	.....	.....	1	12	11	13	2	50	21
Maine	4	3	5	.....	46	48	2	1	2	1	3	1	30	22	70	70
Maryland	75	71	85	61	73	88	9	5	10	5	34	21	53	26	97	129
Massachusetts	.....	.....	1	1	35	48	.....	.....	.....	.....	3	.....	33	32	56	57
Michigan	263	260	273	234	230	236	29	23	28	26	151	140	208	181	384	428
Minnesota	1,013	1,008	734	659	447	574	349	245	383	257	392	319	458	386	745	865
Mississippi	236	215	8	6	73	57	1	3	1	3	39	33	36	23	60	41
Missouri	732	435	255	128	246	278	16	14	20	15	304	188	77	91	901	799
Montana	397	350	3	.....	205	123	303	179	369	213	49	38	34	17	148	111
Nebraska	1,143	771	809	540	143	123	179	131	213	152	346	213	239	141	412	375
Nevada	2	1	.....	.....	29	23	46	33	50	38	1	3	5	6	9	7
New Hampshire	.....	.....	1	.....	25	45	.....	.....	.....	–1	.....	.....	17	25	62	41
New Jersey	6	8	10	2	32	39	2	.....	2	.....	9	5	10	7	36	50
New Mexico	33	3	3	.....	121	101	39	46	39	50	5	5	16	9	26	24
New York	90	49	97	58	519	460	37	38	38	40	84	67	440	419	727	787
North Carolina	295	222	254	194	189	202	.....	1	.....	1	93	72	71	47	261	339
North Dakota	910	682	73	49	32	34	472	319	549	368	91	82	81	67	186	161
Ohio	382	481	405	356	301	359	9	9	9	10	220	167	154	130	547	618
Oklahoma	559	257	13	6	216	263	78	74	92	83	72	61	22	16	415	520
Oregon	130	130	16	2	209	215	127	93	145	114	10	17	21	21	115	135
Pennsylvania	108	94	131	97	548	595	35	25	37	28	242	156	351	272	775	817
Rhode Island	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	1	5	2
South Carolina	133	95	55	43	51	46	.....	.....	.....	.....	54	23	21	9	107	87
South Dakota	450	385	222	160	69	75	395	232	432	244	196	173	230	136	171	123
Tennessee	165	175	45	40	216	249	.....	1	.....	1	167	125	97	54	556	603
Texas	759	448	145	83	478	611	61	50	69	64	161	132	39	27	943	1,012
Utah	27	26	5	4	258	247	76	71	84	73	16	14	45	39	148	147
Vermont	3	1	3	.....	69	74	4	.....	4	.....	.....	.....	81	87	129	172
Virginia	112	84	95	60	198	195	4	2	5	2	82	63	119	82	517	506
Washington	207	238	22	19	218	248	76	72	89	79	10	9	55	52	112	115
West Virginia	5	3	3	5	95	79	1	.....	1	.....	21	9	24	24	129	128
Wisconsin	313	204	413	252	966	911	204	135	215	144	344	204	997	870	1,523	1,485
Wyoming	46	46	15	13	135	131	104	89	128	99	14	19	23	15	52	56
U.S. Government	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous (4)	1	73	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2	.....
TOTAL	**16,205**	**12,751**	**9,294**	**6,830**	**8,905**	**9,037**	**3,474**	**2,593**	**3,922**	**2,887**	**5,176**	**4,018**	**5,145**	**4,091**	**13,981**	**14,261**

Data released Feb. 16, 1984, Farm & Industrial Equipment Institute.

(1) Includes revisions for prior months.
(2) For making bales of under 200 lbs.
(3) Pull-type, mounted, self-propelled.
(4) Sales reported as miscellaneous are retail sales which cannot be classified by state or as U.S. Government. They include sales and dispositions that do not go through usual marketing channels such as gifts to non-profit organizations, intra-plant or company transfers, etc.

NEW AGRICULTURAL WHEEL TRACTOR IMPORTS – JAN. 1981 – JUNE 1984

Number of Units

Nation of Origin	Under 40 HP*	40-79 HP*	80-99 HP*	100 HP and Over*	HP Not Specifically Provided*	Not Elsewhere Specified, Excl. Industrial, Incl. Garden Types**	TOTALS
Canada							
6 mos., 1984	773	35	96	485	96	480	1,965
year 1983	53	59	111	718	1,191	534	2,666
year 1982	32	63	84	347	1,383	233	2,142
year 1981	73	47	121	461	1,915	153	2,770
United Kingdom							
6 mos., 1984	2,932	8,916	1,727	806	1	75	14,457
year 1983	5,173	13,502	1,840	843	32	102	21,492
year 1982	546	3,195	754	156	74	284	5,009
year 1981	814	6,031	1,109	682	15	93	8,544
Japan							
6 mos., 1984	27,083	4,750	87	86	148	8,462	40,613
year 1983	41,265	4,490	69	136	350	9,809	56,119
year 1982	37,534	3,063	13	231	774	8,101	49,716
year 1981	40,978	2,821	3	85	714	5,469	49,530
West Germany							
6 mos., 1984	77	2,780	1,265	249	.....	17	4,388
year 1983	97	10,570	2,747	363	6	33	13,816
year 1982	2	4,016	2,718	668	43	32	7,479
year 1981	2	6,653	2,421	750	7	8	9,841
Italy							
6 mos., 1984	87	882	339	30	.....	150	1,488
year 1983	152	1,598	357	236	2	2,803	5,148
year 1982	417	1,399	369	863	2	67	3,117
year 1981	767	1,839	430	341	57	116	3,559
Romania							
6 mos., 1984	81	557	.....	.....	.....	.....	638
year 1983	271	1,166	.....	.....	.....	17	1,454
year 1982	1,101	3,317	1	1	12	14	4,446
year 1981	558	3,050	.....	1	.....	2	3,611
France							
6 mos., 1984	.....	43	108	403	2	8	564
year 1983	133	819	234	8	.....	3	1,197
year 1982	.....	19	245	11	34	.....	309
year 1981	1	48	.....	17	.....	2	68
TOTALS							
6 mos., 1984	30,624	18,595	3,810	2,064	260	9,246	64,599
year 1983	47,289	34,085	5,367	2,311	1,603	13,406	104,061
year 1982	39,764	15,858	4,190	2,378	2,366	8,739	73,295
year 1981	44,208	21,012	4,084	2,339	2,714	5,858	80,215

Source: U.S. Dept. of Commerce, International Trade Admin., Office of Capital Goods and International Construction.
*Excluding garden tractors. **Including garden tractors.

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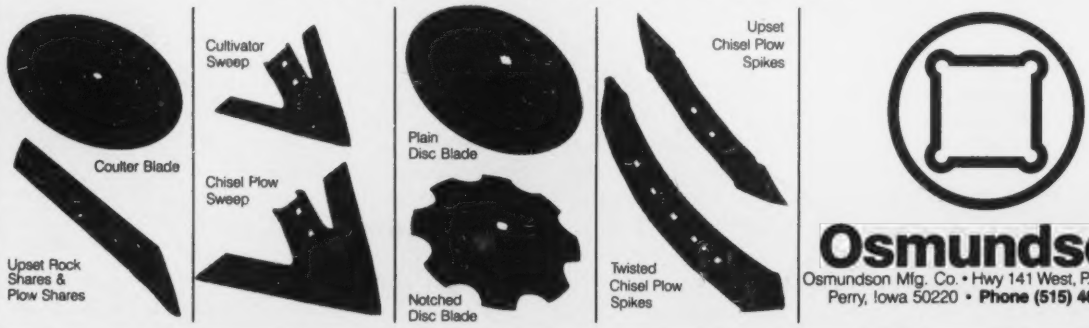

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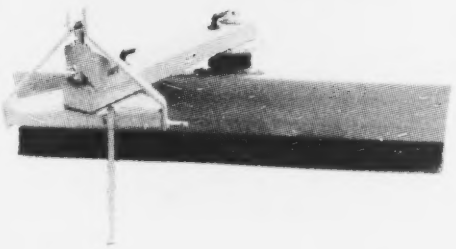
DOLLAR VALUE OF FARM EQUIPMENT
IMPORTS BY COUNTRY OF ORIGIN, Jan., 1979-June, 1984
(In thousands)

Country	Jan.-Dec. 1979	Jan.-Dec. 1980	Jan.-Dec. 1981	Jan.-Dec. 1982	Jan.-Dec. 1983	Jan.-June 1984
Canada	$831,155	$820,500	$706,276	$487,286	$453,551	$300,936
Mexico	10,082	9,080	9,699	11,349	18,563	6,654
Brazil	892	1,002	1,064	4,780	6,424	5,924
Sweden	4,818	4,456	2,784	3,023	2,873	1,694
Denmark	7,158	5,703	4,690	4,910	5,856	4,568
Netherlands	16,942	15,407	13,626	13,924	32,831	23,503
United Kingdom	209,967	215,932	153,589	93,806	163,678	118,933
Belgium	93,709	67,188	50,393	25,730	23,691	15,566
France	62,294	51,488	41,695	30,804	41,333	33,710
West Germany	231,521	236,578	197,110	169,087	248,015	112,181
Hungary	10,727	10,155	9,329	7,564	2,404	4,814
U.S.S.R.	2,715	1,716	1,296	128	1,255	458
Romania	11,648	11,611	12,598	15,461	6,088	2,659
Italy	78,523	94,794	100,853	95,092	99,219	78,147
Spain	9,239	5,559	3,561	6,541	2,946	3,630
Israel	2,616	3,218	2,777	2,677	2,988	2,801
New Zealand	5,312	6,665	8,630	9,792	11,885	7,359
Australia	5,937	4,366	7,306	4,662	3,209	2,394
Japan	267,599	189,753	202,000	181,056	204,818	158,143
China (Taiwan)	1,916	1,573	2,562	2,913	3,617	2,040
China (P.R.C.)	30	100	86	1,381	1,949	1,641
TOTAL	**$1,880,470**	**$1,773,033**	**$1,549,799**	**$1,179,734**	**$1,347,483**	**$895,497**

Source: U.S. Dept. of Commerce, International Trade Administration, Office of Capital Goods and International Construction.

BIG OX



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IMPORTS OF FARM EQUIPMENT BY PRODUCT

Product	Jan.-Dec., 1982 Quantity	Jan.-Dec., 1982 Value in Thousands of Dollars	Jan.-Dec., 1983 Quantity	Jan.-Dec., 1983 Value in Thousands of Dollars	Jan.-June, 1984 Quantity	Jan.-June, 1984 Value in Thousands of Dollars
Knives & Cutting Blades	7,524,683	$10,620	5,043,704	$ 7,957	5,295,966	$ 5,063
Plows & Listers	5,204	4,496	2,669	5,174	1,561	3,594
Cultivators & Weeders	14,342	17,862	17,201	18,844	11,055	11,757
Parts of Plows, Cultivators, Weeders & Listers	.....	21,074	.....	21,750	.....	15,811
Harrows, Rollers, Stalk Cutters, Soil Pulverizers	21,297	7,584	26,784	4,826	13,670	4,274
Parts of Harrows, Rollers, Stalk Cutters, etc.	.....	12,789	.....	13,548	.....	11,247
Planting, Seeding & Fertilizing Machinery	30,217	38,360	30,517	31,923	25,240	19,996
Parts of Planting, Seeding & Fertilizing Machinery	.....	8,987	.....	9,703	.....	6,151
Haying Machinery other than Mowers	7,483	11,207	7,281	10,948	4,724	8,041
Mowers except Lawn Mowers	14,370	25,089	10,469	19,319	8,078	17,096
Harvesting Machines, NES	9,141	110,813	7,974	81,975	5,947	36,958
Parts of Harvesting Machines	.....	58,099	.....	44,635	.....	29,296
Farm Wagons & Carts	4,767	7,684	3,939	5,339	1,813	2,538
Agricultural Machines & Implements, NES	.....	73,701	.....	96,978	.....	63,511
Parts of Agricultural Machines, NES	.....	53,662	.....	60,356	.....	43,460
Tractors, Agricultural, Wheel-Type, New, excluding Industrial*	73,295	505,373	104,061	678,073	65,239	434,592
Tractors, Agri., Used	3,349	23,311	3,548	26,786	2,612	20,185
Parts for Agri. Tractors	.....	183,024	.....	203,547	.....	155,201

Source: U.S. Dept. of Commerce, International Trade Administration, Office of Capital Goods and International Construction.
NES – Not elsewhere specified.
*Use of the term "industrial" here is understood to refer to such machines as forklifts but not to industrial tractors as commonly defined in the farm and industrial equipment industry.

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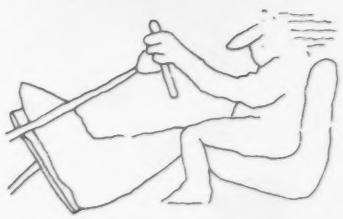

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FARM EQUIPMENT EXPORTS BY TYPE OF PRODUCT

Product	Jan.-Dec., 1982 Quantity	Jan.-Dec., 1982 Dollar Value in Thousands	Jan.-Dec., 1983 Quantity	Jan.-Dec., 1983 Dollar Value in Thousands	Jan.-June, 1984 Quantity	Jan.-June, 1984 Dollar Value in Thousands
Combines, pull-type	1,895	45,765	934	22,487	874	23,655
Combines, self-propelled	5,861	225,909	2,882	125,377	2,001	97,148
Cultivators, tractor-drawn or mounted	4,522	9,213	3,636	5,874	2,030	4,110
Cultivators, NEC, and Weeders	2,745	4,638	2,504	3,804	1,939	4,033
Farm Elevators and Blowers	1,812	5,851	1,802	5,888	559	1,855
Farm Wagons and Carts	1,804	3,100	1,660	3,137	1,113	1,969
Parts for Farm Wagons and Carts	.....	1,155	.....	2,459	.....	811
Fertilizing Machines	4,528	14,319	6,711	17,266	2,600	8,015
Forage Harvesters	2,234	30,420	2,014	25,833	1,080	14,418
Harrows, Disk	4,357	18,713	5,208	17,879	1,463	7,606
Harrows, NEC, & Soil Pulverizers	5,908	7,922	6,244	6,897	3,824	3,451
Parts for Harrows, Stalk Cutters & Soil Pulverizers	.....	8,307	.....	4,454	.....	2,991
Harvesting Machines, NEC	7,390	63,524	5,200	42,927	3,434	42,539
Harvesting Machine Parts	.....	93,927	.....	114,069	.....	73,323
Hay Balers	7,113	45,785	5,160	36,603	3,886	26,540
Haying Machines, NEC (incl. rakes & tedders)	5,063	29,162	3,925	16,823	2,449	13,569
Parts for Haying Machines	.....	26,805	.....	25,109	.....	14,024
Mowers, Cutterbar, tractor-drawn	2,065	5,903	958	2,870	833	2,657
Mowers, Rotary, tractor-drawn (excl. lawn mowers)	9,351	7,192	5,891	5,029	7,396	3,966
Mowers, NEC, tractor-drawn (excl. lawn mowers)	1,641	4,899	1,335	3,861	1,259	4,394
Planting Machines	4,944	11,507	4,504	5,785	4,059	5,416
Plows, Disk	2,132	5,202	784	1,996	692	1,499
Plows, Moldboard	2,709	8,570	2,203	6,612	1,210	3,645
Plows & Listers, NEC	6,190	17,007	5,304	10,914	2,145	6,198
Parts for Plows, Listers, Cultivators & Weeders	.....	24,455	.....	17,774	.....	11,937
Seeding Machines	12,163	23,236	12,363	26,889	5,877	11,101
Parts for Planting, Seeding & Fertilizing Machines	.....	14,943	.....	16,821	.....	13,115
Farm Tractors:						
Under 40 PTO HP	1,133	5,925	637	3,299	353	1,832
40-59 PTO HP	646	7,644	502	4,774	277	2,627
60-79 PTO HP	1,066	17,599	600	8,721	412	6,294
80-99 PTO HP	858	19,883	727	16,340	520	11,136
100-119 PTO HP	2,250	63,492	1,440	46,764	540	15,655
120-139 PTO HP	4,191	124,063	2,263	80,365	1,107	38,177
140-159 PTO HP	1,877	61,223	1,240	46,586	1,005	37,460
160-179 PTO HP	1,400	64,045	1,211	53,807	763	34,589
180 HP & Over	3,253	182,641	1,989	117,916	1,363	83,508
Other Farm Tractors	1,216	18,103	1,724	15,494	800	7,269
Parts for Farm Tractors	.....	658,608	.....	585,095	.....	352,380

Source: U.S. Dept. of Commerce, International Trade Admin., Office of Capital Goods and International Construction.
NEC – Not elsewhere counted or classified.

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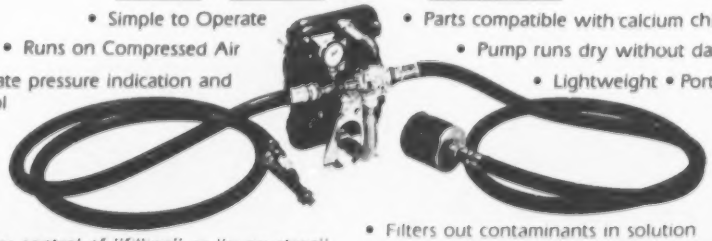

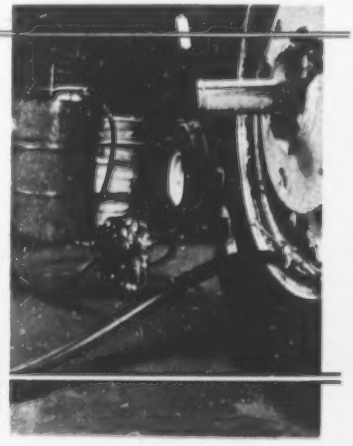

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VALUE OF U.S. FARM EQUIPMENT EXPORTS BY COUNTRIES OF DESTINATION

(Value in thousands of dollars)

Country	1982	1983	Jan.-June 1984
Western Hemisphere			
Canada	$997,453	$852,317	$537,013
Mexico	124,601	45,610	40,139
Guatemala	3,792	2,719	2,099
Honduras	2,825	3,200	1,808
Nicaragua	5,704	5,446	2,922
Costa Rica	1,772	3,083	2,733
Panama	13,032	3,797	990
Trinidad	6,110	4,064	954
Dominican Republic	3,836	6,142	1,921
Colombia	18,238	16,778	8,217
Jamaica	5,600	3,511	1,729
Venezuela	72,641	19,045	12,060
Brazil	19,522	9,048	7,342
Argentina	10,496	9,792	4,274
Chile	3,163	3,517	2,917
Ecuador	14,325	5,886	3,599
Peru	8,811	7,100	3,591
Europe			
Denmark	3,673	1,969	1,557
Sweden	8,046	8,760	7,177
United Kingdom	72,031	65,761	41,464
Netherlands	13,919	10,143	4,497
Belgium	66,237	55,046	32,834
France	118,393	97,761	51,390
West Germany	88,643	76,414	33,278
Hungary	7,409	13,203	4,983
Switzerland	4,208	2,844	2,068
Spain	10,549	7,871	3,563
Italy	8,895	6,660	5,793
Greece	2,161	7,416	14,521
U.S.S.R.	19,825	16,075	8,038
Middle East			
Iraq	9,587	1,380	775
Israel	15,629	15,181	10,811
Kuwait	2,506	1,446	1,086
Saudi Arabia	147,530	307,795	95,167
Jordan	4,307	1,641	805
Arab Emirates	5,434	5,297	979
Iran	1,913	4,199	184
Asia and Pacific			
India	2,075	4,037	878
Thailand	1,988	3,247	1,800
Singapore	15,489	12,731	6,994
Malaysia	2,411	2,428	757
Indonesia	3,181	5,440	2,583
Sri Lanka	561	5,397	3,562
China (P.R.C.)	2,039	1,791	15,020
Philippines	5,328	3,432	3,058
Korea	4,389	5,098	2,302
Japan	19,181	20,001	12,261
Australia	218,132	97,970	107,953
New Zealand	9,152	5,489	2,747
Africa			
Algeria	5,050	6,917	2,029
Libya	2,731	3,276	15,943
Sudan	11,545	10,081	2,821
Nigeria	6,666	1,668	311
Egypt	14,634	13,092	3,777
Rep. South Africa	63,923	57,023	31,848
Senegal	3,481	1,424	237
Zimbabwe	3,532	5,355	986
Zambia	527	2,972	715
Total U.S. Exports, Farm & Industrial Equipment	**$2,378,282**	**$2,014,069**	**$1,197,057**

Source: U.S. Dept. of Commerce, International Trade Admin., Office of Capital Goods and International Construction.

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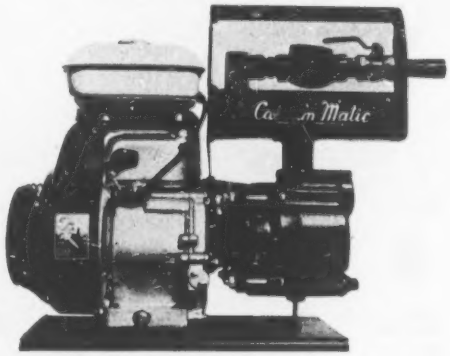

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- 1 set of stands fits all tractors (frame or frameless)
- One man installation in less than 5 minutes
- Heavy 6" casters for easy roll

Cofer Sales & Mfg. Co.

206 S. 2nd St., Dodge City, Ks. 67801, (316) 227-6170

Distributorships/Dealerships available in some parts of U.S. and Canada

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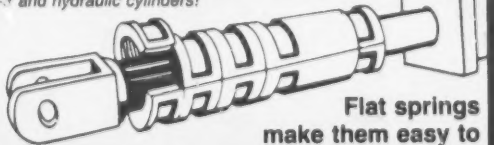
STROKE CONTROL SEGMENTS

The simplest, most reliable way to control the stroke on air and hydraulic cylinders!



O.E.M. inquiries invited

Flat springs make them easy to open and snap on shaft.

WADLER MFG. CO.

Fits Shaft Sizes:
1⅛" 1¼" 1⅜"
1½" 1¾" 2"

Dept. 101
12th and State Line Road
Galena, Kansas 66739 U.S.A.

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Auctions *(Continued from page 13)*

300 utility, 1956 (Good) 1025
2544, 1971 (Good) 2800
674 diesel, 1975 (Good) 4900*
674 diesel, ldr., 1977 (Good) 5500*
674 diesel, 1977 (Good) 5100
606 LP, 1964 (Fair) 2700
706 diesel, 1965 (Good) 3750*
1066 diesel, 1973 (Good) 7250
TD-7 diesel, dozer, 1967 (Good) 5800

JOHN DEERE TRACTORS

70, 1954, (Fair) 900*
70 diesel, ldr., 1955 (Good) 1800
2010 diesel, ldr., 1962 (Good) 2410
820 diesel, 1972 (Good) 3900
1520, 1971 (Good) 5350
4020 diesel, 1967 (Good) 4900
4020 diesel, 1968 (Good) 5500
2030 diesel, 1973 (Good) 5350
2130 diesel, 1972 (Fair) 3850*
450 diesel, crl. ldr., 1970 (Good) 5050*

LONG TRACTOR

R-9500 diesel, 1968 (Fair) 1950

MASSEY-FERGUSON TRACTORS

35, 1960 (Good) 2125
35, ldr., 1963 (Fair) 1950*
50, 1960 (Fair) 1500*
50, 1961 (Good) 2450
65 diesel, 1959 (Good) 2100*
65, 1960 (Good) 2400
65, 1960 (Fair) 1950
65 diesel, 1962 (Rough) 1300*
65 diesel, 1962 (Good) 2275
65 diesel, 1962 (Good) 2500
65 diesel, 1963 (Good) 2450
65, 1963 (Fair) 1915*
65, 1964 (Fair) 2100
135 diesel, 1970 (Fair) 2400
135 diesel, 1971 (Fair) 2750
165 diesel, 1966 (Fair) 2950*
165 diesel, 1967 (Good) 3500
165 diesel, 1972 (Good) 4150*
175 diesel, 1971 (Good) 4650
175 diesel, 1972 (Fair) 3850*
180 diesel, 1965 (Fair) 2750*
180 diesel, 1968 (Good) 3550
180 diesel, 1970 (Good) 3850*
180 diesel, 1971 (Rough) 3350*
235 diesel, 1975 (Good) 3875
245, 1976 (Fair) 4500
245 diesel, 1977 (Good) 6100
245 diesel, 1978 (Good) 6200*
255 diesel, 1977 (Good) 6350*
255 diesel, ldr., 1979 (Good) 7150
2200 diesel, ldr., 1969 (Good) 4900
265 diesel, ldr., 1977 (Good) 7650*
285 diesel, cab, ldr., 1978 (Good) 7850
285 diesel, cab, 1980 (Good) 8000
1085 diesel, 1977 (Fair) 6750
1085 diesel, cab, 1981 (Good) 8100*
2244 diesel, crl. ldr., 1966 (Good) 3400

MINNEAPOLIS-MOLINE TRACTORS

5-Star LP, 1958 (Fair) 1050*
M-5, 1961 (Good) 1450
M-602, 1964 (Good) 2300

OLIVER TRACTORS

S-88 LP, 1955 (Fair) 550*
550, 1966 (Good) 2200*

JONES FARM EQUIPMENT CO.
Dothan, Alabama
September 11, 1984

ALLIS-CHALMERS TRACTOR

200 diesel, 1972 (Rough) 2300

CASE TRACTORS

1070 diesel, 1978 (Fair) 3750*
1070 diesel, cab, duals, 1977 (Fair) 3400
885 diesel, 1980 (Good) 3450

DAVID BROWN TRACTORS

1410 diesel, 1976 (Fair) 2400*
990 diesel, 1968 (Fair) 1025
990 diesel, 1968 (Fair) 1300
880 diesel, 1968 (Good) 1450

DEUTZ TRACTOR

13006 diesel, 1973 (Good) 4750

FORD-FERGUSON TRACTORS

9N, 1940 (Good) 900*
9N, 1940 (Rough) 500

FORD TRACTORS

8700 diesel, duals, 1977 (Excellent) 10,000*
8600 diesel, cab, 1974 (Good) 6000
7000 diesel, 1971 (Good) 5400*
5000 diesel, 1968 (Fair) 3450
5000 diesel, 1967 (Fair) 3400*
4000 diesel, 1963 (Fair) 1500
3000 diesel, 1973 (Excellent) 4000
3000 diesel, 1966 (Rough) 2200
2000, 1968 (Good) 3150
2000, 1968 (Good) 2950
1600 diesel, 1977 (Good) 2200
850, 1955 (Excellent) 2500
641, 1958 (Good) 1800
641, 1958 (Rough) 875
640, 1958 (Excellent) 2450
640, 1955 (Fair) 1000
621, 1959 (Fair) 1000
Sup. Co6 diesel, (Rough) 950*
Maj. diesel, 1953 (Rough) 375
Jub., 1953 (Good) 1700*
8N, 1950 (Good) 1200*
8N, 1949 (Good) 1450*
8N, 1948 (Good) 1100*
8N, 1948 (Rough) 850
8N, 1948 (Good) 1500
8N, ldr., 1948 (Good) 1300
8N, 1948 (Good) 1300*

MASSEY-FERGUSON TRACTORS

1135 diesel, duals, 1975 (Fair) 5550
1105 diesel, 1976 (Good) 5550*
1085 diesel, 1976 (Good) 4100
1085 diesel, 1975 (Good) 3650
1080 diesel, 1970 (Rough) 2350
285 diesel, 1977 (Excellent) 8750
285 diesel, 1975 (Good) 5800
240 diesel, 1980 (Excellent) 6500*
175 diesel, 1971 (Good) 3550
175 diesel, 1970 (Good) 3300*
165 diesel, 1972 (Good) 3600
135 diesel, 1974 (Excellent) 3775*
135 diesel, 1972 (Excellent) 3550
135 diesel, 1966 (Good) 3150
65 diesel, 1963 (Fair) 1500*
TO30, 1952 (Good) 1250
TO30, 1952 (Fair) 800

INTERNATIONAL HARVESTER TRACTORS

1086 diesel, cab, 1979 (Good) 8600*
826 diesel, 1970 (Fair) 3750
784 diesel, cab, 1980 (Fair) 5175
784 diesel, cab, 1980 (Fair) 4900
766 diesel, 1975 (Good) 4600

(More...)

Auctions *(continued)*

684 diesel, 1981 (Good)	5550
504 diesel, 1966 (Rough)	750
424 diesel, 1965 (Good)	1800
140, 1959 (Fair)	1275*
JOHN DEERE TRACTORS	
8430 diesel, cab, 1978 (Good)	12,000*
4430 diesel, 1976 (Fair)	7600
4430 diesel, 1976 (Good)	8600
4230 diesel, duals, 1975 (Fair)	7000
4230 diesel, 1975 (Fair)	6500
4230 diesel, cab, 1975 (Excellent)	12,700
4020 diesel, 1969 (Good)	5500*
4020 diesel,1965 (Rough)	2525
4020 diesel, 1965 (Good)	5000
2840 diesel, 1979 (Excellent)	8300
2640 diesel, 1979 (Rough)	2700
2630 diesel, 1975 (Excellent)	5600
2040 diesel, 1977 (Good)	6800*
420, 1958 (Fair)	950*
420, 1957 (Good)	1400
LONG TRACTOR	
550 diesel, (Good)	2800
OLIVER TRACTOR	
1465 diesel, 1974 (Good)	2900

NOTES:
Prices reported are for individual sales at wholesale on an "as is," "cash and carry" basis. Prices reported are **not** averages.

Condition Classifications:
EXCELLENT: Engine in perfect condition, 400 to 600 hours of use. Rubber—80% tread remaining, no breaks or cracks. Paint—original and bright. General appearance: excellent.

GOOD: Engine in good running condition. Rubber—70% tread remaining, no breaks or cracks. Paint—original or a good repaint job. General appearance: good over-all.

FAIR: Engine possibly in need of a minor overhaul. Rubber—60% tread remaining, some cracking evident in sidewalls. Paint—only fair, weathered and some rust apparent. General appearance: worn, some dents, minor parts (gage covers, etc.) missing or broken.

ROUGH: Engine obviously in need of a major overhaul. Rubber—smooth. Paint—scarred, weathered, rusty. General appearance: dents, ruptures, broken parts, loose wires, components (such as lights) broken, missing or inoperative.

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56th SiMA

International Agricultural Machinery Show
Paris, France

March 3-10, 1985

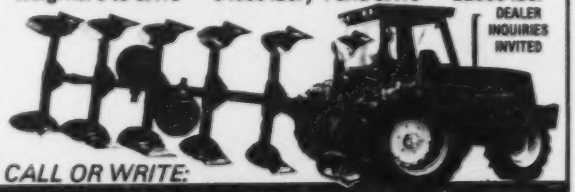
56th International Agricultural Machinery Show
17th International Exhibition of Mechanized Gardening Equipment

Write In (56) on Reply Card

ROLLOVER PLOWS

DESIGNED & BUILT FOR HEAVY FOLIAGE & STUBBLE

7X18" bottom plus extension Rollover Moldboard plow with category III or IV hitch (above) will plow 7 to 8 acres per hour plus. The 6 to 8 (18") bottom models for dual axle drive feature a patented, floating top link (detailed in inset) for plowing in uneven terrain. The 4 and 5X18" (5 bottom below) plows are designed for single axle drive which can include front-end assist. On land wheel span runs as follows: 4X18" - 12-foot; 5, 6 and 7X18" - 13-foot; 8X18" - 14 foot. All models feature a trash clearance 36" high, 36" or 40" point-to-point with shear bolt or rigid shanks. The following model frames carry a 1-year limited warranty for the indicated maximum tractor weights: *6 to 8X18"—34000 lbs. / 4 and 5X18"—22000 lbs.*



DEALER INQUIRIES INVITED

CALL OR WRITE:

M & M PLOW & EQPT. MFG. CO., INC.

PHONE 915/653-7231 • P.O. BOX 831 • SAN ANGELO, TX. 76902

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NOTE

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Cov. 1, p. 3-4, 14, 16, 18,

20, 22, I-4, I-6.